

**AMATEUR**

# TAPE RECORDING

VOL. 4

No. 11

JUNE 1963

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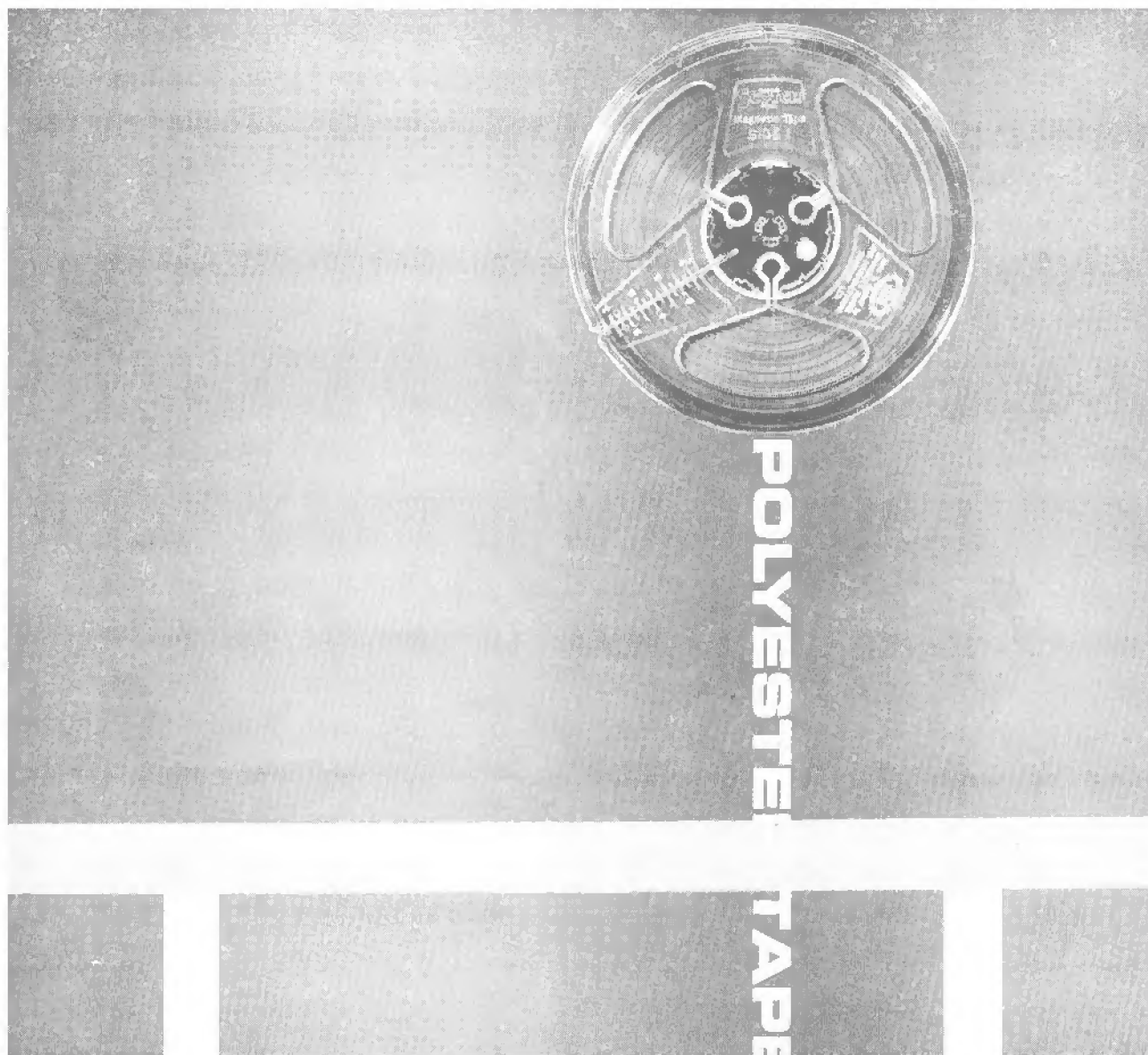
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# AMATEUR TAPE RECORDING & HI-FI

*Gives the  
amateur the  
professional  
touch . . .*

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## ON THE COVER

- This is the prototype of the ATR Transistorised Radio Tuner, which you can build yourself for half the price you would have to pay for a similar piece of equipment. Full instructions and diagrams, plus details of a Special Offer enabling you to purchase all the components at a considerable saving, are given in this issue.

Vol. 4, No. 11

June, 1963

## No time for the pause button

By THE EDITOR

**H**OW appropriate that the BBC's 'Sound' programme should have been resumed coincident with the Audio Festival. Those who decided it had had its day soon thought better of it: one up for all who protested. As for the Festival itself, the general opinion seems to be that it was rather less funereal this year and that visitors showed a healthy curiosity which, if it exhausted the energies of exhibitors, did much to revive their spirits.

So far, so good. But we mustn't complacently assume that all's right with the audio world again, reduce the volume control and relax until it's time to prepare for another marketing spree. The public is a fickle customer, and needs constant reminders of the products and services this tight little industry has to offer. Those who went to the Festival may never have heard it so good, but they'll soon forget the message unless it is given plenty of echo.



## MORE 'ATR' PROJECTS

Rest assured that ATR will not be slow to cater for the varied activities of its steadily expanding circle of readers, of which there was further evidence at the Fair. Encouraged by the display of genuine enthusiasm for our original projects by the growing contingent of creative recordists, we shall continue to present them with opportunities for enlarging their interest and experience in all aspects of this fascinating hobby.

More build-it-yourself ideas . . . more Information Books . . . more wonderful Special Offers, including a whole series of Sound Effects Discs . . . more services to readers, and to the trade and industry which serves them . . . more informative articles and imaginative features, in line with the progressive policy which is finding such zealous endorsement . . . These are the things ATR has in store for you in the coming months, which will be vital to your enjoyment of tape recording. There'll be no close season for this journal: its followers make no concessions to the almanac, for any time's tape recording time.

## ANOTHER SPECIAL OFFER

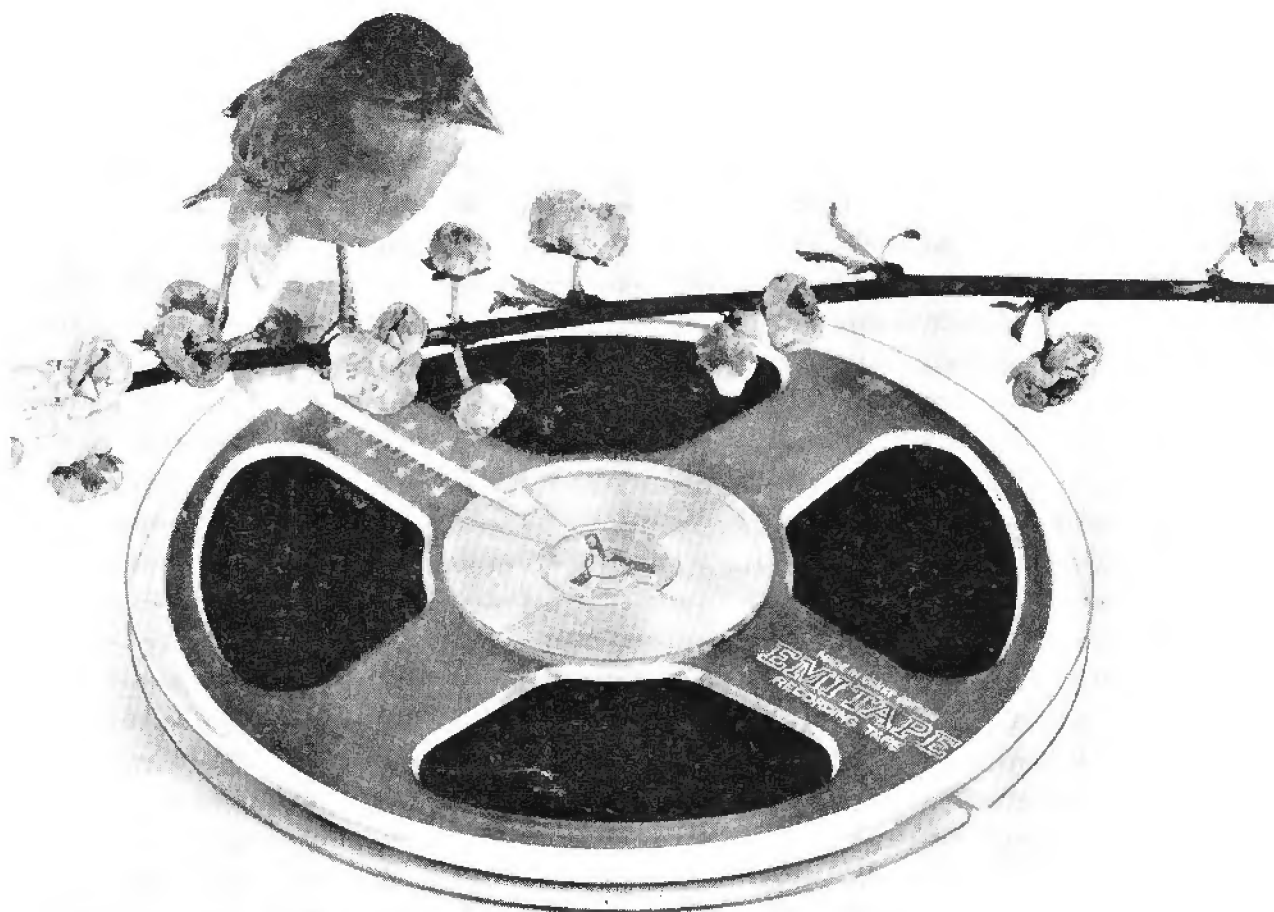
It's in your own interests to ensure that you don't miss a single issue, as from the next, which will contain another Information Book on **Outdoor Recording**, and another Special Offer of a **Hi-Fi Sound Effects Disc** which you won't be able to get unless you order your July ATR now. There are prizes to be won, too, by all whose favourite haunt is their recording den, however small. And that includes you . . .

Oh, and if you haven't yet secured that first Sound Effects Disc which was the subject of last month's Special Offer, and is still being snapped up, you'd better hurry. See the coupon on page 28. And see your newsagent, too, to make doubly certain of that next issue, on sale **JUNE 21st, 1963**.

Advance with ATR, and you'll soon acquire that professional touch!

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## How to find summer with Emitape

This summer, don't leave your tape recorder at home gathering dust. Get another reel of Emitape. Then take it out and about, and give it a chance to hear what's going on in the world.

Children are playing outdoors. Lawnmowers are cricketing. There's birdsong, and a buzz of insects. Mix these and other effects into your own tapes, and hear how

evocative they sound. Or try adding an 'on-location' sound track to a cine-film, or to a programme of colour slides.

**DON'T KNOW HOW TO START?** Then write in for the first of a new series of leaflets, *Tape Outdoors*. It's free! It was written specially for Emitape by John Borwick. And it tells you how to start outdoor recording. Also available, John Borwick's leaflet on *Tape Indexing*.

Get another reel of **Emitape**

Please send me your free leaflets, *Tape Outdoors* and *Tape Indexing*, by John Borwick.

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Amateur Tape Recording & Hi-Fi

# ATR brings you a pictorial FOLLOW-UP TO THE AUDIO FAIR

By THOMAS SHERIDAN

**I**F there is anybody who is still doubtful about the increasing interest in tape recording and hi-fi, especially among young people, he cannot have been among the thousands of enthusiasts who visited this year's International Audio Festival and Fair in London.

For four days the Hotel Russell was crowded with visitors who showed a keen curiosity concerning the products of nearly 90 exhibitors and patiently queued to hear demonstrations on four floors above the main hall. Though the crowds thinned on a wet Saturday evening, attendance on the final day broke all records.

The opinion of many exhibitors with eight years' experience of the Fair was that there were not as many visitors as last year, but that those who came showed a more searching interest. And it was generally conceded that the event was rather livelier than in previous years. As one manufacturer's representative put it: 'There seemed to be more going on, and people took a genuine interest in our equipment. They asked intelligent questions, too.'

## Radio-tape recorder

Was there anything new? There were many new models, but the only really novel development in tape recorders was one with a built-in radio, introduced by **Stuzzi** at the rather remarkable price of 55 gns.—including the purchase tax to which, as a radio, it is subject. With the single 3½ ips

SEE NEXT PAGE



Julie Grant and John Leyton see their singing voices translated into colour by Chromasonics.



Ray Ellington calls at the ATR stand.



Mr. B. Wilson of BASF (fourth from left) with some of the tapespondence club officials he brought together for the first time.



A visitor examines the new Stuzzi radio-tape recorder.



## FOLLOW-UP TO THE AUDIO FAIR—from page 5

speed, 7 in. spools, monitoring and superimposition facilities — and, of course, an aerial — the Stuzzi 203 should make a big appeal to those who want to make recordings from the radio at the flick of a switch.

There was also the new version of Chromasonics which packed the Stuzzi demonstration room hour after hour, day after day, with audiences anxious to see and hear the creation of ATR Technical Editor F. C. Judd. On the opening day pop singers Julie Grant ('You can count on me') and John Leyton ('Cupboard love') came at ATR's invitation to see their own voices register on the large screen in fascinating colour. The special demonstration tape also featured electronic music produced by the RCA Synthesiser which provoked almost as many questions as the Chromasonics display.

The ATR stand in the main hall was almost constantly besieged by visitors inquiring about Chromasonics and the

other build-it-yourself projects which they could see on view. Copies of the latest issue were in great demand by old and new readers, attracted by the pull-out Information Book on 'Making the Most of Your Tape Recorder' — plus the prospect of winning a brand-new Stuzzi 401 in a simple competition.

### Just what they wanted

The Hi-Fi Sound Effects Disc, subject of an ATR Special Offer, was also on sale and proved a bargain which no creative recordist or cinefilm enthusiast could resist. 'Just what we've been waiting for!' was the cry. On the final day the demand for the disc was so great that it was temporarily sold out and a fresh consignment had to be rushed to the Fair.

Among visitors to the ATR stand on the opening day were band leader Ray Ellington, who expressed interest in the sound effects record, and contributor Russ Allen, who reviews it in this issue (see page 16). Representatives of the trade were also interested in ATR's new scheme for issuing certificates to Recommended Dealers as well as to Approved Dealers, and were able to inspect specimen certificates on display.

Every day, members of tape recording clubs from all parts of the country, wearing ATR badges for easy identification, called at the stand to discuss their problems. For the first time, the **Federation of British Tape Recording Clubs** was represented at the Festival, and put on recitals of specimen tapes made by leading amateur recordists.

### Tapespondents combine

An event of some significance in the field of tapesponding was the presence in one room, working in concert, of representatives of four of the leading tapesponding societies — the Voicespondence Club, World Tape Pals, World Wide Tape Talk, and International Tape Friends. They had come together for the first time to assist **BASF** in providing facilities for visitors to send free tape messages to friends or relatives. It presented them with a unique opportunity to exchange notes first-hand and to convert people to the hobby to which they are dedicated. (See **Spool Talk**, page 30).

Hundreds of visitors took advantage of the BASF offer, while hundreds more sampled a taped German lesson in language laboratory booths installed by **Electronic Classrooms Ltd.**

Demonstrations showing the properties and uses of magnetic tape were staged by other manufacturers in contrasting style. Such technicalities as signal-to-noise ratio and distortion factor were made intelligible for the layman by **Agfa's** television 'Visualiser,' which fascinated large audiences. The **Mastertape** demonstration, which explained the mysteries of drop-out and other obstructions to good performance, was a model of lucidity.

SEE NEXT PAGE



Mr. S. B. Duer of Fi-Cord International makes a recording on the Fi-Cord 202 while Miss Hansi Roler, an expert on the zither, plays the instrument she learned to master while a schoolgirl in Austria. The music was used to demonstrate the popular portable at the Fair.



A German student tries the language laboratory method. Mr. John Parrington of BASF is at the operating console in the background.



Mr. Peter Cameron of Polytechnia (left) shows ATR Editor Walter Gillings the world's most expensive microphone.



Mr. Harold Payton of Harrow makes a message tape to send to his niece and her soldier husband in Cyprus.

● TOP RIGHT: Mr. Ken Short of Recording Devices, Mr. Victor Stuzzi and Mr. Fritz Sippl of AKG (holding headphones) compare notes on 'Personal Listening.'

CENTRE: Technical Editor F. C. Judd, creator of Chromasonics, pictured with Julie Grant and John Leyton.

BOTTOM: Editor Walter Gillings and disc reviewer Russ Allen have a chat at the ATR stand.



'You've never heard it so good' was the official Festival motto, and manufacturers of loudspeakers and their attendant equipment lived up to the compliment. Hi-fi enthusiasts lurked hungrily at the doors of such exhibitors as **Chapman, Leak, Tannoy** and **Wharfedale**, whose 'demo rooms' were mostly filled to capacity. Comely young women wearing gilded sashes attracted attention not only to themselves but to the first public demonstration, in stereo and mono, of the extra-slim **Eleganza** high-fidelity reproducer newly introduced by **Goodmans**. A horn-loaded speaker system specially designed to go with the **Rogers Cadet II** stereo amplifier was another big draw.

### Waiting period

There were as many anxious for sight and sound of the latest tape recorders by **Brennell, Grundig, Philips, Tandberg, Telefunken**, and the rest. If some of them were not exactly new, there were hundreds who had not yet seen them or, having set their hearts on a new model, were still waiting to claim it. **Truvox**, whose improved Series 60 and 80 has been selling faster than they could make them over the past six months, were as busy apologising to those who had grown impatient. But they were now able to promise a new delivery schedule of two to three weeks on all but their stereo unit, which involves a wait as long as three months. It shows the way the wind is blowing . . .

Centrepiece of the **Sony** display was the 124 gn. 521 2- and 4-track mono/stereo model. The new 464-CS (reviewed on page 27) also attracted attention. Its facilities for multiple synchronous recording made the TK46 of special interest among the **Grundig** range.

**Telefunken** were showing two new machines designed to bridge the gap between domestic and professional standards, the only difference between them being the operational speeds — and the price: 209 gns. for the M24KL, 246 gns. for the M26KL. Both machines are fitted with separate record and playback amplifiers.

### More new Stuzzis

Besides the built-in radio model 203 and the inter-track transfer 401, **Stuzzi** exhibited several other new machines: in all they announced six additions to their range, priced between 43 and 73 gns. One, called the Stereo Boy, is a building-in unit designed to replay stereo or mono tapes to hi-fi standard. Another, the Radiocord Super, also has a superhet radio receiver for both medium and long waves built in. With two speeds and 4-track heads, this is the one which will cost 73 gns. — including purchase tax.

Among many foreign visitors to the Fair were Mr. Victor Stuzzi, founder of the firm represented here by Recording Devices Ltd. and Mr. Klaus Schneider, deputy director of the BASF Tape Division. Mr. Fritz Sippl, marketing director, and Mr. Bernhard Weingartner, research chief, of **AKG**, Vienna (represented here by Politechna Ltd.), were also kept occupied answering inquiries concerning the wide range of **AKG** headphones and microphones, which included a new model reputed to be the most expensive microphone in the world. Complete with a remote control unit by which its sensitivity can be adjusted from a distance up to 300 ft., it costs in the region of £400, I was told.

Altogether, a pretty interesting show this year, well worth puffing up and down those stairs . . .



● In  
the  
July  
ATR

## ON HOLIDAY WITH YOUR TAPE RECORDER

Information Book No. 3—The ATR Guide to Outdoor Recording

Also

ON SALE, JUNE 21st

Another unique HI-FI SOUND FX DISC offer!



# THE SWOP COUNTER

**W**OULD you like to acquire a Sony 521 4-track tape recorder which is only six months old and in perfect condition? If you are the owner of a 4-track stereo machine in fair condition which is lighter than the Sony — weighing less than 42 lbs., in fact — reader **D. F. Roden, Yew Cottage, Potters Lane, Cartbridge, Nr. Woking, Surrey**, is willing to make a swop. 'I travel a great deal and find it rather too heavy to carry around with me,' he says. Any offer sent to the above address will be forwarded to him.

**Brian Dewar, 10 Golf Street, Carnoustie, Angus, Scotland**, who congratulates ATR on 'this wonderful free service you supply for readers,' has a six-string Spanish guitar (as new) which he would like to exchange for a good microphone or amplifier, small record deck or anything connected with tape recording and hi-fi.

A brand-new 5-pin Grundig connecting lead is available from **J. L. A. Rodgers, Heather Cottage, Chilbolton, Stockbridge, Hants.**, to anyone who wants to exchange it for a reel of BASF tape of equal value.

He believes the lead is designed for use with a Grundig Cub.

**R. G. Jones, 19 Tilgate Way, Crawley, Sussex**, owns a Butoba clockwork portable which operates at  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips, takes 5in. spools, is equipped with a dynamic microphone, and has 'unbelievable battery life.' He is looking for a Saba, Harting HM5, 'or any other quality recorder,' and wants to arrange a swop.

'Your Swop Counter is a fine idea,' writes **R. Ingram, 20 Rosslyn Crescent, Bentley, Doncaster**, who has a genuine 8-string mandoline and spare strings he will exchange for two 7in. D.P. tapes 'or what have you.'

## Calling Formby fans

**Ron Waterfield, Dunard House, Shirley, Solihull, Warks.**, collects recordings of the late George Formby's songs; he has over 100 of them and would like to swop some of them with other fans. He is also anxious to obtain postcard pictures of George and would be glad to hear from genuine Formby collectors.

A Linear tape recorder oscillator/amplifier designed for use with a deck

● This is a **FREE SERVICE** to ATR readers. If you have any articles or equipment in good condition to exchange for anything you need, send details to The Swop Counter, ATR, Room 532, 168 Regent Street, London, W.1, and they will be included without charge.

such as the Truvox or Collaro, in new condition, is available from **C. D. Lyons, 12 Cranmer Close, Eastcote, Ruislip, Middlesex**. He would like to swop it for a VHF tuner or radio, some tapes, or anything else of tape recording interest.

Anybody seeking a camera outfit comprising an Ensign Special Reflex (3½in. x 2½in.) with f/4.5 Tessar 13.5 cm. lens, a Ross telephoto, six metal slides, Rada rollfilm holder, lenshood, tripod, etc.? If so, **Ron Elvey, 64 Montbelle Road, New Eltham, London, S.E.9**, would like to swop the lot for a tape recorder or hi-fi amplifier.

● If you wish to take up any of these offers you should write direct to the person concerned; and we apologise to those readers who have had to wait longer than usual for their offers to appear in **The Swop Counter**, which has been crowded out of the last two issues. We'll try not to let it happen again . . .



## Alive to every sound

Like the ears of this wary fox, the Grampian DP4 microphone is sensitive to an extremely wide range of sounds. With its uniform frequency response from 50 to 15,000 c/s, the reliable, medium-priced DP4 will greatly improve the standard of your recordings.

## Grampian DP4

—also for broadcasting, public address and call systems.

Low impedance microphone, complete with connector and 18 ft. screened lead . . . . . **£8.0.0.**  
Medium and high impedance models . . . **£9.0.0.**

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Learn by easy stages by following this new series for beginners

# ELECTRONICS WITHOUT TEARS

**I**N this new series of articles I shall be dealing with basic radio—or, if you like, electronics—as affects the tape recorder and audio equipment generally.

To an engineer, a thorough knowledge of basic principles is highly necessary. Such knowledge does, of course, become useful to the amateur as he advances his interest in electronics. But he does not need it to the same extent to be able to construct and operate microphone mixers, preamplifiers and other equipment such as is frequently described in this magazine.

On the other hand, successful construction and operation of any electronic equipment does require some technical know-

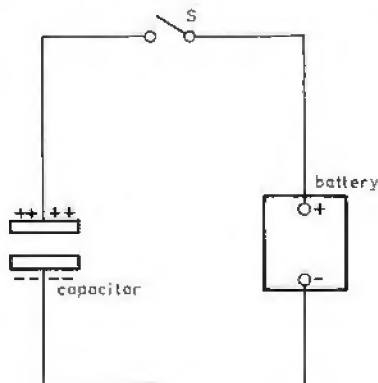
**By A. LESTER RANDS**

ledge. For instance, one must understand the function of a resistor or a capacitor, the valve and transistor, tuning coils and transformers, for these are the elements of radio and electronic apparatus. One must also understand a theoretical circuit diagram, for it is not always possible to provide pictorial diagrams for assembly and wiring.

## Component symbols

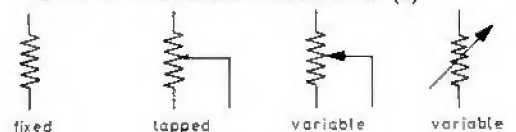
The symbols used in radio and electronic equipment circuits generally indicate the function of a component rather than showing its physical shape. The simple resistor, for example, is used primarily to control the flow of current in a circuit. In other words, this component offers 'resistance' to current flowing through it, and in a circuit is drawn as a zig-zag line (see Fig. 2).

The capacitor, on the other hand, is used to hold electrical charges for long or short periods as desired, and it does this by reason of its construction from metal plates or thin metal foil and suitable insulating material. The basic capacitor consists of two metal plates with air as an insulator, and if each plate is connected to the terminals of a battery the capacitor will charge up to nearly the full voltage of the battery. One plate is negative and the other positive, as shown in Fig. 1.

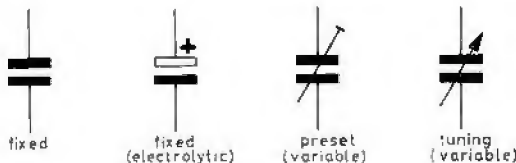


**FIG. 1: When the switch S is closed the capacitor will charge up to nearly the full voltage or potential of the battery. When the switch is reopened the capacitor will remain charged.**

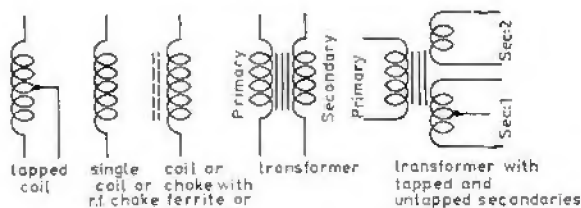
**FIG. 2: CIRCUIT SYMBOLS (1)**



**GROUP 1: Resistors**



**GROUP 2: Capacitors**



**GROUP 3: Inductors (coils) and transformers**

Before we go into the basic functions of the different components, however, let's examine the circuit symbols which are reproduced in Fig. 2. The first group are resistors—fixed, variable and tapped. The arrow on the variable indicates the function immediately. Now look at the next group, which are capacitors. In this case there are only two kinds, fixed and variable, and again the cross arrow indicates the variable. The preset type is also variable.

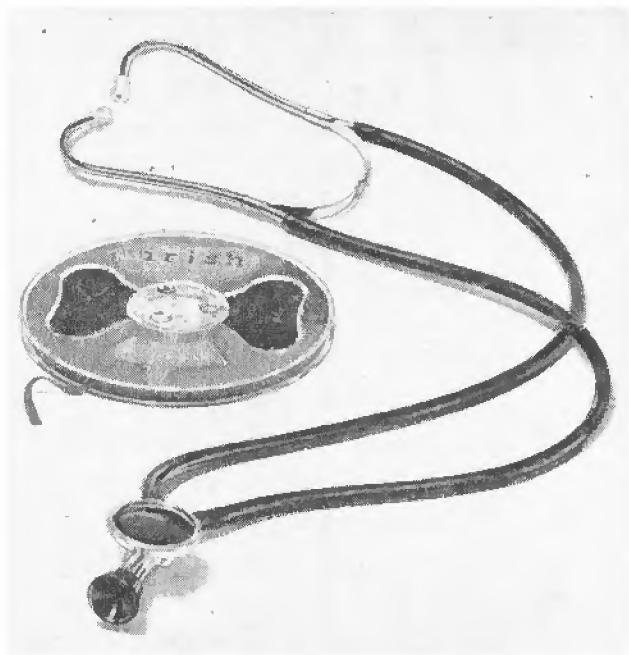
The components shown in the third group are those employing inductance — chokes, tuning coils and transformers. In the transformer, the iron core is indicated by the vertical lines. The symbol of the coiled line shows that the component is one containing coiled or wound wire. The fourth group shown in Fig. 3 are miscellaneous components such as switches, the loudspeaker, headphones, etc., which are all used in theoretical circuit diagrams and can be easily identified.

## Drawing circuits

Having established symbols for all the different components, we can now draw complete circuits by connecting them together with appropriate lines representing the wires, complete with crossovers and connecting points as shown in Fig. 4. This is not a working circuit; merely an example to show how the connecting lines are put in.

Valves and transistors have also to be used, especially in amplifier and radio receiver circuits; but I will deal with these separately next month. In the meantime, study some theoretical

SEE NEXT PAGE



## for the professional **IRISH**

—the recording tape that gives the finest fidelity possible. How? Through the unique Ferrosheen process. Exclusive to Irish tape, this process produces a mirror-smooth surface to a magnetic tape with distinct technical advantages to satisfy even the most meticulous professional. The Ferrosheen process makes for exceptional high frequency response (due to precise perfection of tape/head contact) . . . head wear is minimal . . . external lubrication unnecessary — less oxide abrasion, no lubricant build-up on recorder head . . . minimum drop out . . . maximum reduction of background noise. Your Irish Tape stockist, and other details including technical data, from A. C. Farnell Ltd. Hereford House, Vicar Lane, Leeds 2 Tel: 35111.

'IRISH', 'FERROSHEEN' and 'Signature Binding' are registered trade marks of Orradio Industries Inc., Opelika, Alabama.

## ELECTRONICS—from page 9

circuits, take a simple one and see if you can assemble it on paper by drawing the shapes of the components all connected up with the correct wiring.

If you look through recent issues of **ATR**, you will find both pictorial diagrams and theoretical diagrams to assist you. For instance, the radio tuner circuit and its pictorial diagrams shown elsewhere in this issue will become much clearer now that you have at least a little knowledge of circuit symbols.

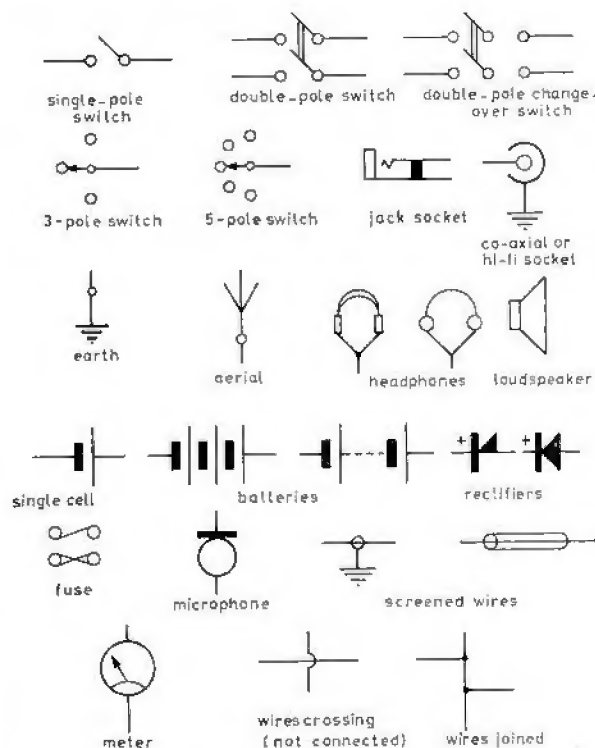


FIG. 3: CIRCUIT SYMBOLS (2)

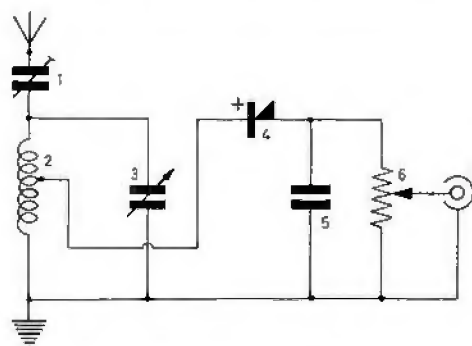


FIG. 4: Can you read the circuit and identify the components? Answers below.

### DID YOU IDENTIFY THEM?

The components in Fig 4 are: 1. Preset capacitor, 2. Tuning capacitor, 3. Tuning capacitor (variable), 4. Rectifier (diode), 5. Fixed capacitor, 6. Variable resistor (potentiometer), 7. Co-axial or screened socket.



● VAL PARKER says:

# HEAR THIS! BUT NOT TOO MANY TIMES

- **Mutiny on the Bounty.** Robert Armstrong conducts the MGM Symphony Orchestra. TA-MGM-C 913. Twin-track mono, 3½ ips, 35 mins. (35s.)

JUST supposing I were captain of some good ship or other and my crew tried to mutiny . . . 'Hear this!' I'd say, and pipe this tape to them, over and over again. Well, perhaps a couple of times would be enough. I doubt if they'd ask for more.

One must admire the ingenuity of composer Bronislau Kaper in hinting, just here and there, at some of the strains which we landlubbers associate with the sea; and when he lets himself go his music is unmistakably oceanic. But he—or the people who selected those parts of the film soundtrack which make up this tape—have let themselves go a little too often for my liking.

The only parts I find easy on the ear, let alone my stomach, are the Tahitian festival music and the love song, 'Follow me,' which you get on both tracks, once sung by native singers and later by an English choir. For the rest, it's more like a sound effects record—and not all that hi-fi, either.

And after the violent cacophonies of storm at sea and mutiny, all of which I'm certain must sound very much better when you can see the pictures, the tape trails off to a funeral dirge inspired by the death of Mr. Christian, which left me quite dejected.

Mind you, I like film music—of the sort you can listen to without watching the screen, which is proverbially rare. Like the theme from 'The Big Country,' for instance. If that was on tape, I'd buy it. But I—and the people next door—must draw the line at this.

- **Out of the Shadows.** The Shadows. Columbia TA-33XS 1458. Twin-track mono, 3½ ips, 35 mins. (35s.)

This is the second helping of these popular instrumentalists we've had the pleasure of running past our tape heads, to the accompaniment of those peculiar tingle

ing sensations induced by the sort of music they make—if you know what I mean.

Though the original disc appeared only last year, some of the 13 numbers they present here came quite fresh to ears which have probably forgotten them in the interval; always excepting such old-timers as 'South of the Border' and 'Perfidia,' to which their distinctive technique gives a very different sound.

Three of the more recent hits, including 'The Bandit' and 'Bo Diddley,' are vocals. I like the thumping bass in the stirring march-rhythm of '1861,' and the contrasting beat of 'Kinda Cool.' There's another marathon feat of drumming (a bit too marathon for me, though), and several echo effects which pack a real electronic punch.

Keep 'em coming, Columbia!

- **Bobby Vee Meets the Crickets.** Liberty TA-LBY 1086. Twin-track mono, 3½ ips, 30 mins. (35s.)

Somehow for me young Bobby Vee epitomises the sort of singing sound (note

## tape parade

that I don't say just singing) which has kept the teenagers screaming their approval for two or three years now. Longer than that? Perhaps it only seems longer to my ears, which prefer a gentler, more natural tone.

Yet I can listen to Bobby and like it . . . or I thought I could, until I listened to him for 30 minutes straight. His earlier tape, issued last year, was bearable enough. So are the better parts of this one, which is composed of last-year hits such as 'Peggy Sue,' 'Bo Diddley' (see above) and 'The Girl Can't Help It.'

But the Vee voice has become more raucous, to conform with the general trend, and I don't think I like it so much, especially when it is electronically multiplied so many times that you can't tell the original Vee from the X's Y's and Z's. The numbers, too, don't seem so melodious . . . but perhaps that's another trend.

And this is no reflection on the Crickets, who give him ample backing here. They make a good scoring team, in fact, in

spite of a rather sticky wicket.

- **The Grass Roots of Bossa Nova.** Dom Carlos e Seu Grupo. Graphic Sound SC-0001. Twin-track mono, 3½ ips, 35 mins. (35s.)

It's a far cry from Brasilia to Newcastle, but this mixed selection of popular numbers with a Latin-American beat is performed by a group of musicians on Tyneside who, we're told, have made a study of such rhythms. At the same time you are invited to guess how many make up the group. My guess is no more than three, and the sound of their music, though agreeable enough, can hardly be called 'big'.

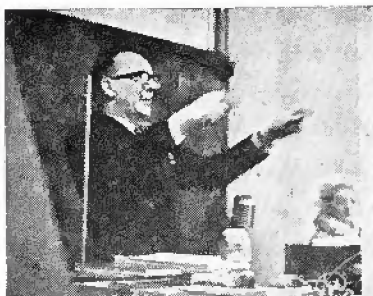
Still, it is rather well recorded, and their performance may well serve as a model for other groups who are trying to get their work on tape. The 14 items range from 'Peanut Vendor' to the famed 'Desafinado' itself, and the recording belongs to a series presenting 'Northern Stars' and issued in Newcastle.

- **Tyneside Songs Old and New, sung by Gordon Faith.** Graphic Sound CB-0001. Twin-track mono, 3½ ips, 20 mins. (29s. 6d.)

From the same source comes this 'Constellation' recording of eight songs by the star of 'Blaydon Races,' the Flora Robson Playhouse production. They're a mixed bag of grave and gay ditties, from a tribute to 'Me little Wife at Hyem' to a rather plaintive lament over a strike which is keeping Geordie short of brass and frustrating his sporting instincts.

Again, the recording is good; and if the songs were in a dialect that fell more easily on my tympanum I might enjoy them better. But the only one I can really appreciate, which seems to have got into the mixture by mistake, is 'Blow the Wind Southerly.' I'll say amen to that. Still, those who have fond memories of 'The Waters of the Tyne' should welcome these reminders that 'Newcastle is me Native Town.'





● DEREK MAYBANK tells you more about

# MUSIC FROM MATHEMATICS

● The rapt audience here is listening to ATR Technical Editor F. C. Judd (left) talking about synthetic and electronic music in a lecture at the Institution of Electronics. Note the expressions on the faces of the two listeners (right) as they are treated to a demonstration.

**S**YNTHETIC music is catching on . . . you can now buy it in the shops!

We recently described the R.C.A. Music Synthesiser, from which many recordings have been made which are only available on disc in the U.S.A. (see 'The Music Synthesiser,' ATR, April '63). Now the Brunswick Record Co. have issued an interesting disc called 'Music from Mathematics' which was produced entirely by an I.B.M. 7090 Computer coupled to a 'Digital to Sound Transducer.'

The two sides between them contain 18 different recordings. It's an L.P. record, and it is available over here under the Brunswick label—number STA-8523 in the stereo version and LAT-8523 mono.

## Computer composition

The process of composing music on and for a computer and sound transducer is highly complex. Since any sound can be described mathematically, the composer must first determine

the numbers for specifying the particular sounds he is interested in. These numbers are then punched on I.B.M. cards which are fed into the computer, the digits being recorded in the 'memory' of the machine.

A computer is thus able to store information from which it can give instructions for an almost limitless range of sounds. Instead of writing a score, the composer feeds the computer with a second set of instructions for the 'music' he requires, or he may allow the computer varying degrees of freedom to select its own musical arrangements at random.

## New sounds

From here the computer supplies the required information to a Digital to Sound Transducer in the form of magnetic impressions on tape. The transducer in turn converts these impressions into actual sound for reproduction over a loudspeaker or for normal sound recording.

The Brunswick record sets out to show the possibilities of the computer and sound transducer in many different ways; for example, it illustrates controlled attack and decay and different timbres. It also shows that conventional musical instruments can be imitated and that new sounds can be produced as well.

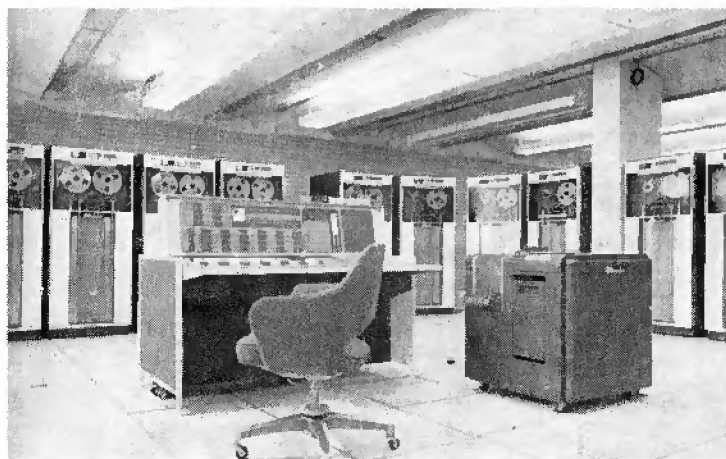
One recording that is particularly amusing and yet a fine example of the application of the computer is a simulated male voice which 'sings' (with an American accent) the well-known 'Daisy Bell'—to its own piano accompaniment! Those interested in electronic music will also appreciate the tone row or 12 note compositions and noise studies, and the complex rhythms which only a computer could cope with.

## TAPE WAS 'NOT EVIDENCE'

A tape recording of the sound of sawing was played to a Valuation Panel at Guildford, Surrey, but they would not accept it as evidence.

Appealing against the assessment on his property, a resident claimed that the noise came from a nearby carpenter's shop. The panel allowed the recording to be played, but agreed with the valuation officer's submission that it could not be accepted as evidence.

The panel reduced the assessment, while refusing to accept the tape as evidence.



● At the I.B.M. Data Centre in London, I.B.M. 7090 and 1401 computer systems are maintained for commercial or scientific organisations wishing to make use of them.



# TAPE GUIDES

... for practical people

● Have you a practical tip which may be useful to other readers? It could earn you a guinea. Send it to 'Tape Guides,' ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1.

## 4-track on 2-track

HERE'S a novel idea, sent in by reader P. Wilkinson, of West Derby, Liverpool, which permits a 4-track recording to be replayed on a 2-track machine without too much signal loss or interference from the backward-running tracks. Cut a short piece of leader tape to a width of 3/16in. and make it just long enough to wrap round the replay head. The object is to cover that part of the 1/2-track head which would

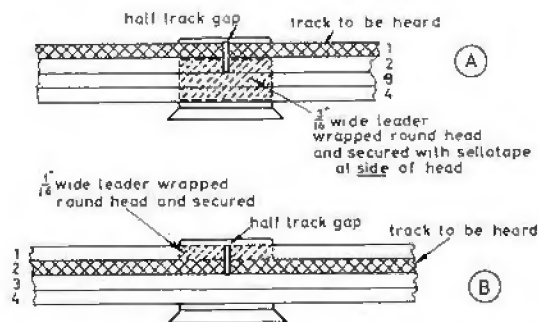


Fig. 1: Method of masking unwanted parts of 4-track recording during replay over a 1/2-track head.

otherwise allow the 1/2-track recording in the reverse direction to come through, as in Fig. 1 (A).

To replay Track 2 of the 4-track recording, cover the top half of the replay head with a strip of leader tape 1/16in. wide, as in Fig 1 (B). Adopt the same procedure for Tracks 3 and 4 when the tape is turned over.

Reader Wilkinson gets a guinea for his tip.

## Wind and rain protectors

A simple but effective windshield for a microphone can be made by cutting a suitably sized hole in a piece of plastic foam such as is used for packing. Fit over the head of the microphone and secure with elastic bands.

Transparent plastic bags, too, make good tape recorder covers and are ideal for portables, especially in wet weather. Holes may be cut in the plastic to provide access to controls. For these tips a cheque goes to reader Tom Robinson, Whitstable, Kent.

## New spools for old

'I have found that the best way to clean dirty tape spools is to swish them around in warm, soapy water—not hot water, or you may buckle them,' writes reader F. A. Morris, Nottingham. 'This will bring back that sparkle they have when they are new.'

The jack socket is fitted to the lid and a rubber grommet at the base, as in Fig. 2. Knot the cable as shown to prevent it pulling through the container.

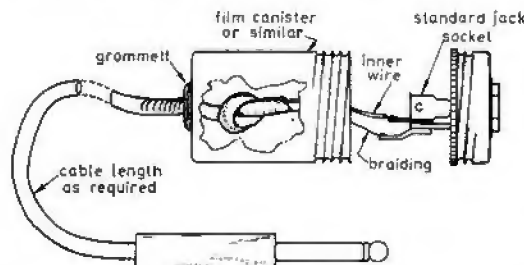


Fig. 2: A simple screened cable connector.

The idea comes from reader D. D. French, Stroud Green, London, N.4, who also receives a guinea.

## Remote cue light for the ATR Mixer

The Technical Editor writes:

I have in use a slightly modified and larger version of the ATR 4-Channel Mixer in which I have included a VU meter and a remote cue light circuit (see Fig. 3A).

One has to be careful of the ht—earth return and heater earthing because of the risk of hum loops. I found it necessary

SEE NEXT PAGE

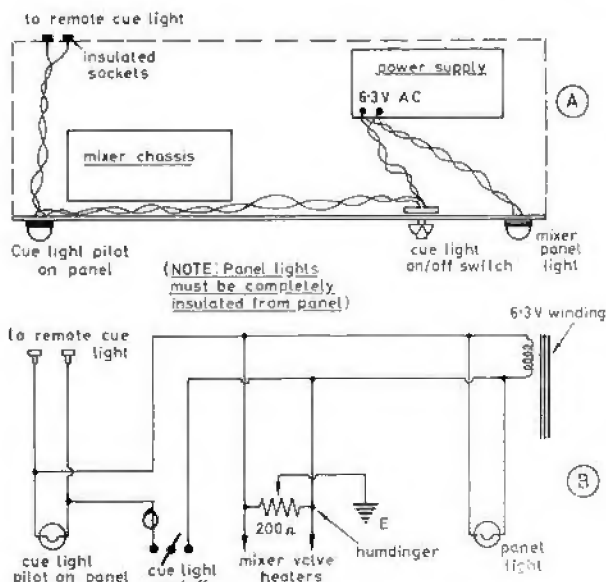


Fig. 3: A remote cue light operated from the ATR Mixer.

## TAPE GUIDES—from page 13

to allow the ht— to be taken to the mixer chassis via the metal work of the case and not by a separate lead. The 'humdinger' also had to be fitted as shown in the diagram, and is simply adjusted for minimum hum level. The 6.3V A.C. wiring must not be earthed except via the humdinger (see Fig. 3B).

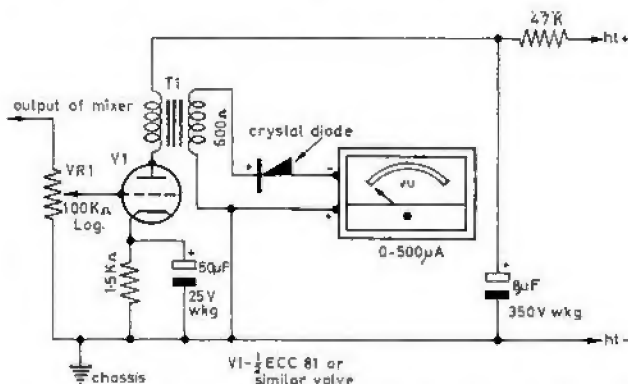


Fig. 4: VU meter circuit used with the ATR Mixer. The transformer T1 should have a ratio of app. 3:1 stepdown to a secondary winding with a 500 to 600 ohms (D.C. resistance) winding. A transistor driver transformer may be found suitable.

The VU meter is actually a 500 micro-amp large-scale meter movement which I have used with the necessary amplifier as shown in Fig. 4. The meter was already calibrated in volume units, but readers wishing to calibrate a plain scale meter can do so (see Fig. 5).

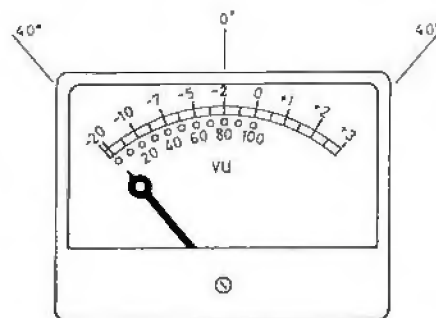


Fig. 5: Calibration of a VU meter.

The control VR1 allows the meter level to be set against that of the tape recorder so that the two work together. It is essential, of course, to check this with an audio signal generator for the different levels and to see that the meter does this over an audio frequency range from, say, 50 to at least 10,000 cps.

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**HI-FI STEREO 13W AMPLIFIER Model S-99**  
Within its power rating, this handsome looking amplifier is the finest available. U/L push-pull output. Printed circuit board construction. £27.19.6.



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**HI-FI FM TUNER Model FM-4U**  
Available in two units. Tuning unit (FMT-4U £2.15.0 incl. P.T.). I.F. amplifier (FMA-4U £12.6.0). Printed circuit for I.F. Amplifier and Ratio detector. own built-in power supply, 7 valves, Tuning range. 88-108 Mc/s. Total price £15.1.0.



FM-4U

**HI-FI AM/FM TUNER. Model AFM-1.** Also available in two units as above: Tuning heart (AFM-T1 £4.13.6, inc. P.T.) and I.F. amplifier (AFM-A1 £20.13.0.). Total £25.6.6.

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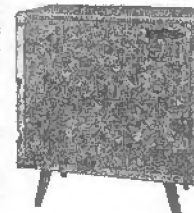
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● RACHEL LINDSAY explains her

# TAKE - A - TAPE HOLIDAY PLAN

*It's guaranteed to banish beach boredom*

**E**VEN in the most happy marriages there comes a time when husband and wife disagree about something. More often than not, it's hobbies. Husband likes to tinker with his carpentry, his car or his garden, while the wife likes to knit or sew or — if she's like me — just sit and watch TV.

Of course, it's a good thing for a man and wife to have different hobbies, for it gives them something to talk about when they're at home together. But on holiday it's another thing entirely, and for the husband and wife who don't enjoy the same sort of pastimes, that annual two weeks with pay can often end in a glorious row. I know, because it's happened to me.

When we first got married, my husband and I agreed on how to spend holidays. We both liked to loil about on the beach all day and go to a good restaurant where we could dance in the evening. But the years have changed us— or, at least, changed me.

## What to do?

Though I still like dressing up and having a good meal at night, during the day I find it tedious just to lie on the beach. I love soaking up the sun, but I can't bear having nothing with which to occupy myself while I'm getting my tan.

Reading with dark glasses on is pretty impossible, I find. And when I took to listening to a transistor radio, the little ear plug I used all the time to avoid annoying my neighbours began to hurt my ear.

Now I'm planning my holiday again, and once more it's the sunlit coast of the Cote d'Azur for fourteen glorious days away from the kitchen sink. But the thought of lying on the beach with absolutely nothing to do except listen to French singers crooning untranslatable songs is beginning to horrify me. At least, it did horrify me, until I evolved a plan. For I'm going to take my tape recorder along to entertain me.

I telephoned BBC Woman's Hour to find out when they were beginning their next new serial. I've made a note of it in my diary, and every afternoon I'll put my little portable in position, switch on, and leave it to record the story. I'll make quite sure I don't go back until it's over, for I shan't want to hear it yet awhile!

last about ten minutes. Generally they make amusing listening, and they will be infinitely preferable to the continuous beat of the Top Twenty.

I've passed on my idea to several of my friends, and they are all now busy adopting it. It's all part of the Lindsay plan for happy holidays.

## That creamy look

A beauty tip to help your holiday along . . . how to prevent your skin from becoming too painful in the sun.



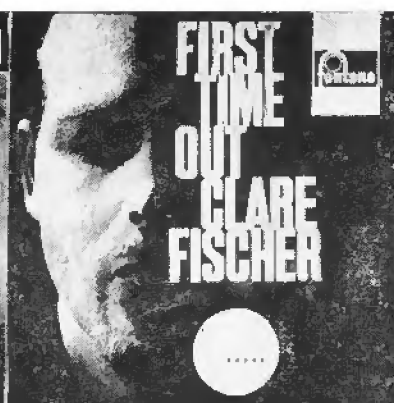
**You can recapture all the pleasant moments of your holiday if you use your tape recorder to make a permanent record of it, right from the start. Don't forget that a busy railway station is filled with fascinating sound.**

I'm hoping that before I go away I'll have recorded on my tape two, if not three serialised novels, beautifully read as they always are, and with each instalment lasting about fifteen minutes. I've worked out that I'll be able to listen to four instalments a day, which will give me two hours of listening time which I can break up by sucking ice cream, playing beach ball and swimming.

Just in case time hangs heavy on my hands, I'm also recording some of the short stories which are broadcast about 10.30 or 11 o'clock in the morning and

If, like mine, your skin is inclined to be too greasy, you'll eschew all the suntan lotions and heavy creams suggested by beauticians. I find that dabbing some milk on my skin in the morning before I go out helps to keep it supple and smooth, and gives me a creamy look without the shine.

Though I don't advise you to wear a lot of junk on your face, I do advise you to use waterproof mascara and an eyebrow pencil. It's amazing how it will improve your appearance, even if you don't wear any other make-up.



piano; Don Branch, drums — and got them swinging out on bass themes he's written. Gene, a delightful character, to my mind has never come over on disc quite the way he should, and this is his best recording to date. The local boys, too, are good; and if I say my only criticism is that Lewis's tone is not as good as Mulligan's, I think you'll see what I mean.

The Wright Groove is right groovy, man!

● **Asia Minor: Dizzy Reece — Esquire 32-185.** (Recorded Mar. 13, '62). Reece, trumpet; Joe Farrell, tenor and flute; Cecil Payne, baritone; Hank Jones,

**W**HAT better way to start than with someone new? **First Time Out: Fontana 688 124 ZL** features a piano man who is just too much and more, with Gary Peacock, bassist extraordinary, and drummer Gene Stone. Such rapport! Whew!

Inevitably this will be compared to the Bill Evans Trio. I promise you, this is more; a little further out, a little further on. Peacock's display has the edge on the late la Faro and the piano man, **Clare Fischer**, is really different — a fabulous player.

First time out, go get this. I do deClare, it's the most!

● If Clare Fischer has **New Ideas**, then so has **Don Ellis, avec Quintet**, on **Esquire 32-183**. (Recorded May 11, '61). Ellis, trumpet; Alf Francis, vibes; Jaki Byard, piano; Ron Carter, bass; Charlie Persip, drums.

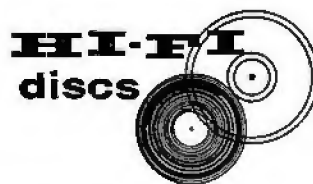
Ellis is, first, a brilliant trumpeter and secondly a most refreshing composer. Vibist Francis is new too; he is a slave to nobody's style, and the music which he and Ellis cook up is extraordinary. With a superb rhythm section, they've contributed the newest sound and ideas galore.

There is one track, 'Despair to hope,' with the two soloists, odd percussive sounds and a little Swanee whistle, which conveys moods in the most



# THIS FISCHER IS FABULOUS!

says **RUSS ALLEN**,  
reviewing the latest



wonderful way. Sleeve notes, by Ellis, are an education in themselves. Get it!

● **Budd Johnson** has been on the jazz scene for nigh on 40 years. You'll find this difficult to believe when you hear him with the **Four Brass Giants** on **Riverside RLP 343**. (Recorded New York, Aug 22 and Sep. 6, '60). Budd, tenor, with Clark Terry, Harry Edison, Nat Adderly, Ray Nanace, trumpets; plus rhythm.

Johnson plays superbly on some tracks, only fair on a couple; but the brass is out of this world, swapping chorus after chorus, four quite different stylists and all blowing good. Joe Benjamin on bass is rock-like, and everything swings round him like crazy.

Yes, yes, yes comma yes!

● Those who don't dig string bass solos — and they must be legion — will miss some very interesting jazz if they pass over **The Wright Groove: Bass solos over the years — written by Wright, featuring Eugene Wright. Philips P 08755L.** (Recorded Apr. '62, Wellington, N.Z.).

Wright, bassist of the Brubeck Quartet, has taken three New Zealand lads — Laurie Lewis, baritone; Lew Campbell,

piano; Ron Carter and Charlie Persip.

Dizzy is still a little wild, but he's matured considerably since he left the London jazz scene. This is a fine set. Farrell hasn't the best of tones, but he plays a lot of jazz and his flute, particularly on Reece's original 'Ackmet,' is splendid. As for Hank Jones, he's impeccable.

● **Miles Davis** calls **Gerry Mulligan** 'Jeru,' the title of his latest **L.P., CBS BPG 62134**. (Recorded June 30, '62). In a typical swinging Mulligan album, he never seems to play badly. Tommy Flanagan, pianist (sweet!); Ben Tucker, bass; Dave Bailey, drums; and Alec Dorsey, who flipetty-flops about on a conga drum. Despite Mr. Dorsey, it swings.

Why do they encourage these bongo bangers out of their natural Latin habitat to clutter up perfectly good rhythm sections? It's an insult to any good drummer. Thank Heaven they've under-recorded this one, but I could still hear him.

Nevertheless, Jeru's for you.

● Last but not least (though I doubt if it will make the Top Twenty) is **Contrast's MEXI Authentic Hi-Fi Sound Effects**.

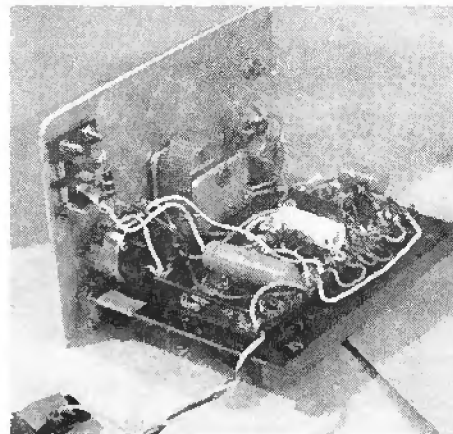
A splendid record, full of useful sounds, from the ominous 'Cell door, keys and locks' (have you paid your rates yet?) to 'Storm at sea, thunder, wind and seagulls' — 14 tracks in all.

My old ginger tom has been doing his nut ever since he heard 'Lion roaring,' and he still thinks 'Twin-piston aircraft landing' is a cat's amplified purr. **ATR Technical Editor F. C. Judd** is responsible for this, and he receives my accolade for some very sound effects.



# THE ATR TRANSISTORISED RADIO TUNER

Designed by F. C. JUDD, A.Inst.E.



Back view of the Tuner

- How often have you wished you had a really good radio tuner with which to make tape recordings of your favourite programmes? And without spending too much money . . .
- The Technical Editor has specially designed the ATR Transistorised Radio Tuner, which you can easily build for yourself with the aid of the diagrams. It will give you results as good if not better than any similar tuner you can buy, and will cost you only half the price.

**T**HE ATR Transistorised Radio Tuner has been simplified to the greatest possible extent consistent with adequate reception from the medium wave Home and Light programmes only.

In the London area it was found possible to receive the Third Programme on the medium wave transmission, but this will depend entirely on local conditions. **The use of an external aerial to improve reception will destroy the selectivity of the ferrite aerial.** Reception of the long wave Light Programme might be possible with a suitable extra tuning coil connected

- In association with Clyne Radio Ltd., ATR enables you through another exclusive Special Offer to obtain all the components you need for only £2 12s. 6d. including postage. A piece of equipment like this would cost you between £5 and £6 if you bought it in a shop. So that you save at least 50 per cent by building it yourself — and you experience that satisfaction which comes of building your own equipment.
- Details of the Special Offer, with the working diagrams, are on pages 18-19.

in series with the 'earthing' end of the medium wave tuning coil L1.

The circuit of the Tuner is given in Fig. 1. To obtain maximum sensitivity and selectivity the ferrite aerial is used in conjunction with a Mullard type AF 117 transistor. The transistor is operated in a **reflex circuit** and therefore performs a dual function, that of regenerative R.F. amplifier and combined L.F. amplifier simultaneously.

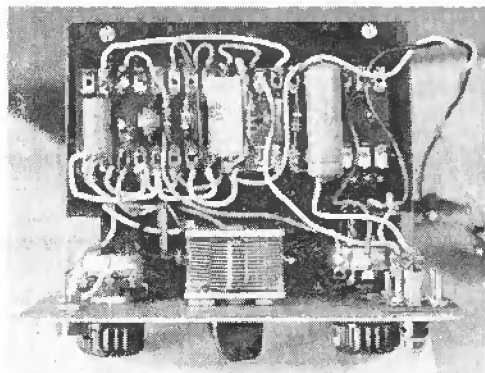
The R.F. signal from the aerial coupling winding L2 is applied to the base of the AF 117 and, after amplification, is demodulated by the crystal diode which has a small amount of forward bias to improve the detection efficiency. The audio signal is then returned to the AF 117 base via C5 and the coupling winding L2 for further amplification. The 5K.ohm potentiometer VR2 forms the collector load, and from here the audio signal is taken to the output socket of the tuner. The average output signal level, under good reception conditions, is more than sufficient to fully load the radio or gram input of a tape recorder.

The tuner will operate satisfactorily from a 6 or 9 V battery, and consumes approximately 1 mA. It is therefore economical in operation and should function for several months from an Ever Ready PP9 battery even with long running periods.

## Constructing the Tuner

The front panel is of 18 swg aluminium and the chassis may be made of paxolin, hardboard or similar insulating material. The chassis is joined to the panel with a piece of  $\frac{3}{8}$  in. x  $\frac{3}{8}$  in. batten. The general layout is shown in Figs. 2, 3 and 4.

The ferrite aerial is mounted beneath the chassis together with the AF 117 transistor, and the connecting leads from both



Overhead view of the Tuner

SEE PAGE 24

## YOUR WORKING DIAGRAMS FOR THE ATR TRANSISTORISED RADIO TUNER

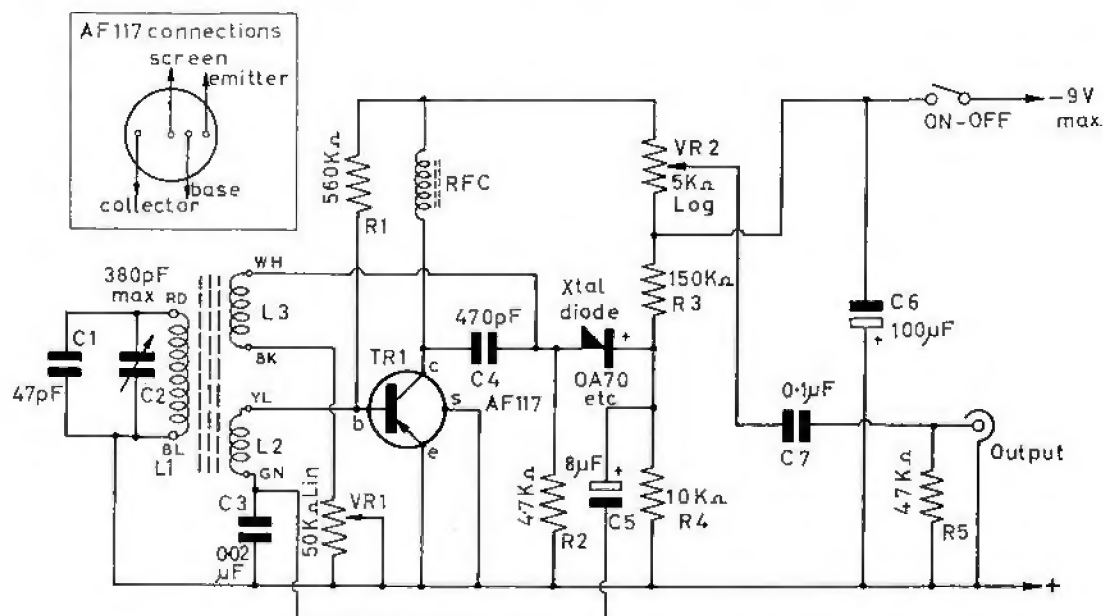


FIG. 1: CIRCUIT OF THE TUNER

## COMPONENTS FOR THE ATR RADIO TUNER

		Retail price		
Aluminium 18 swg 6in. x 4in. (front panel)	1s.	0d.	1 8 mfd. electrolytic capacitor 12 V wkg.	2s. 0d.
Paxolin or hardboard 5in. x 4in. (chassis)		9d.	1 0.1 mfd. capacitor 30 V wkg.	1s. 0d.
1 AF 117 transistor (Mullard)	9s.	6d.	1 0.02 mfd. capacitor 30 V wkg.	1s. 0d.
1 OA 70 crystal diode or equivalent	2s.	0d.	1 470 pfd silver mica capacitor	6d.
1 ferrite aerial rod with coils	8s.	6d.	1 47 pfd silver mica capacitor	6d.
1 R.F. choke (RFC)	1s.	6d.	1 560 K.ohm $\frac{1}{4}$ W resistor	3d.
1 pointer type control knob		9d.	1 150 K.ohm $\frac{1}{4}$ W resistor	3d.
2 round control knobs	2s.	0d.	1 47 K.ohm $\frac{1}{4}$ W resistor	3d.
1 14-way miniature tagboard	2s.	6d.	1 10 K.ohm $\frac{1}{4}$ W resistor	3d.
1 co-axial or hi-ft output socket	1s.	3d.	1 4.7 K.ohm $\frac{1}{4}$ W resistor	3d.
2 $\frac{3}{16}$ in. rubber grommets		2d.	2 battery clips	1s. 0d.
1 Jackson tuning capacitor (380 pF max.)	8s.	0d.	1 yd. wiring wire	2d.
1 5 K.ohm potentiometer (log) with sw. (VR2)	4s.	6d.	Packing and postage	2s. 6d.
1 50 K.ohm potentiometer (lin.) (VR1)	2s.	6d.		
1 100 mfd. electrolytic capacitor 12 V wkg.	2s.	6d.		
			£2 17s. 4d.	

**SPECIAL  
OFFER  
TO ATR  
READERS**

- The total retail price of the components for the ATR Transistorised Radio Tuner is £2 17s. 4d. But if you take advantage of the Special Offer by which you can purchase all the components at one time, they will be supplied to you at the inclusive price of £2 12s. 6d. inclusive of postage and packing charges. Address your order to: Dept. RT, Clyne Radio (Components) Ltd., 162 Holloway Road, London, N.7, enclosing the Special Offer coupon (see next page) with your remittance. NOTE: All cheques, money orders or postal orders should be made out to 'Amateur Tape Recording.'



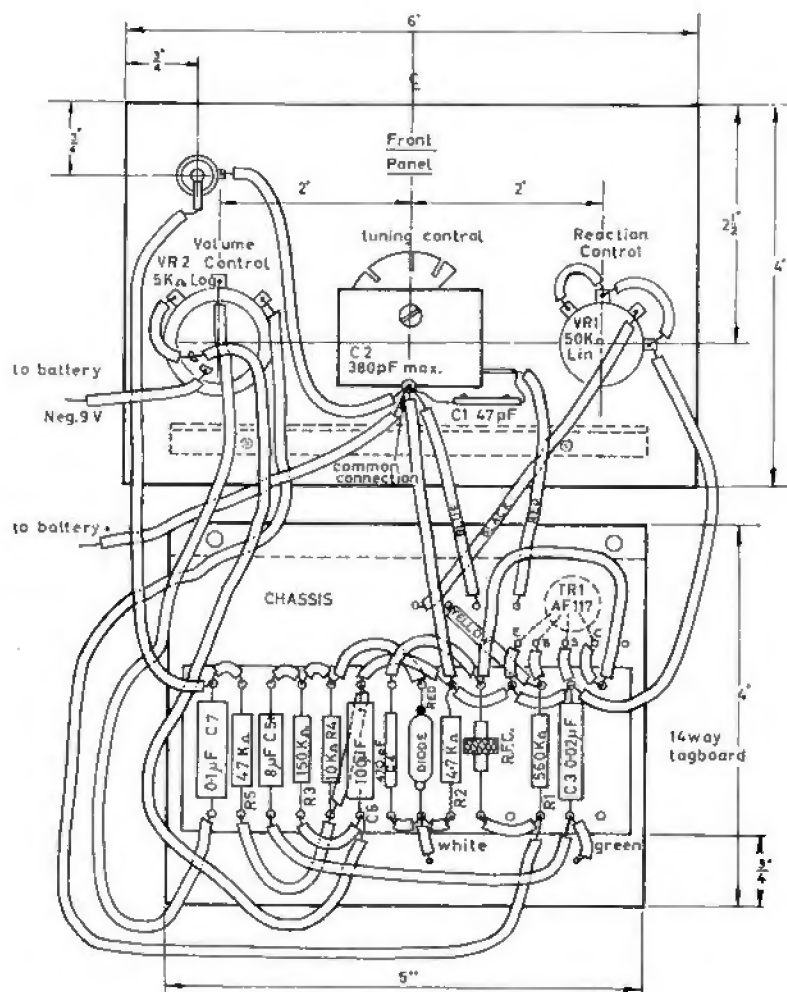


Fig. 2: Wiring plan of the ATR Radio Tuner

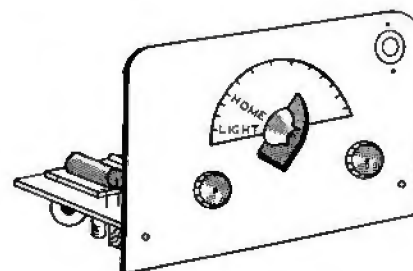


Fig. 4: Front panel of the Tuner

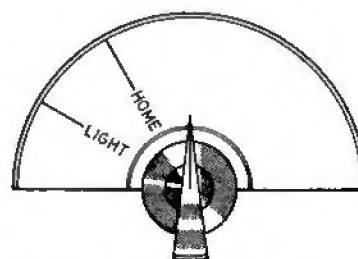


Fig. 5: Approximate tuning positions of the Home and Light Programmes

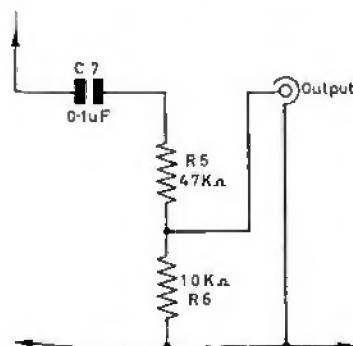


Fig. 6: Alternative output circuit when the Tuner is used with the microphone socket of a tape recorder

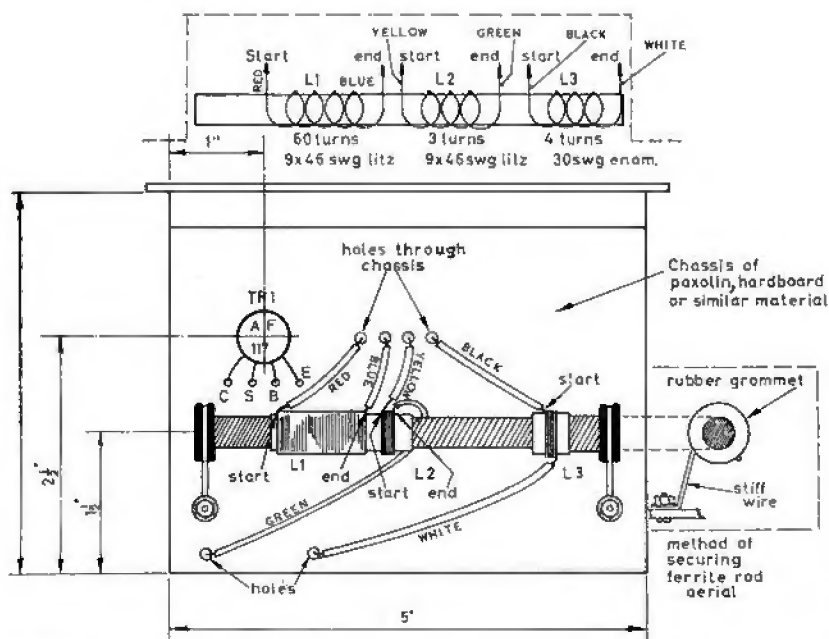


Fig. 3: Details of the ferrite rod aerial and tuning coils under chassis (see text).

**SPECIAL OFFER  
COUPON**

ATR Radio Tuner  
June 1963

## Northampton's winning effort

# SEVEN CLUBS HELP IN BIG TAPE RALLY

**S**EVEN other clubs in various parts of the country made their contributions to the success of the first National Tape, Audio and Cine Rally, organised by Northampton Tape and Cine Club.

Originally planned for last October and postponed for five months through lack of interest, the event drew crowds for a full day's programme featuring creative tape recordings and cinefilms, in addition to a trade exhibition.

Credit for staging such a worthwhile show puts Northampton well ahead in the ATR Club League for 1963. Clubs which lent their active support will also receive extra points in the exciting competition for the ATR Club Challenge Cup, at present held by Thornton Heath.

### Recording contest

Seven other trophies are offered in the ATR Tape Recording Contest in which all clubs are invited to compete for the first time. Six of these trophies are being donated by leading firms—BASF, Fi-Cord, Lustraphone, Philips, Simon and Stuzzi.

Many clubs are now busy preparing their entries in the Recording Contest, which must be received not later than August 31st. Points awarded in this contest will go forward to augment those awarded every month for original effort, outstanding progress, and services to the community and tape recording.

### Mayor's appeal echoed

**W**ITH a clubroom open all day six days a week, Barnsley YMCA members are increasing in numbers and activity. The speech of the local Mayor, appealing to the public to place a mile of coins on the Town Hall steps in aid of the 'Freedom of Hunger' campaign, was recorded and relayed through loud-speakers at the town's centre. The new

secretary is John Fisher, Studio One, YMCA Buildings, Eldon Street, Barnsley, Yorks.

### Recipe for success

Representatives of Catford, Leyton and Ilford clubs joined with Bethnal Green in discussing why some tape recording clubs succeed where others fail. Several members said they had been

## THE LEAGUE TABLE

	Pts.
1. NORTHAMPTON	30
2. BRIXTON	20
3. SOUTHALL	18
4. BOSTON	16
4. HUDDERSFIELD	16
6. WALTHAMSTOW	14
7. LEICESTER	13
8. NORTH LONDON	12
8. THORNTON	12
HEATH	12
10. AYLESBURY	10
10. RUGBY	10
12. MEDWAY	9
12. SOLENT	9
12. SOUTH	9
BIRMINGHAM	9
12. BETHNAL GREEN	9
16. COVENTRY	8
16. WOOLWICH	8

attracted to their local club through ATR reports, and some thought that manufacturers could help by advising new owners to join a club. All agreed that each club involved would continue to play host to the rest to make the group meeting a regular feature.

The Mayor and Mayoress of Hackney attended when Bethnal Green members provided an evening's entertainment for an old people's club on Moorfields Estate. The oldsters' singing was immediately played back through power amplifiers. Background music was furnished for a local civic reception at which a European flag was presented by representatives of countries connected with the borough's twinning scheme. A lunch hour demonstration of stereo was also given to members of the Town Hall staff.

The new secretary is L. Hastings, 19 Achilles House, Old Bethnal Green Road, London, E.2.

## TAPE AND CINE PACKS HALLS WITH FANS

**I**T was standing room only for some of the items on the varied programme which packed three halls at the first National Tape, Audio and Cine Rally organised by the Northampton club. A tape marionette show by the Britwell (Slough) society was one of the most popular items. A talk by F. C. Judd, A.Inst.E., Technical Editor of ATR, on 'Synthetic Sound and Electronic Music,' with illustrations, attracted enthusiastic audiences.

An 8mm colour film showing the club's activities in 1962 was presented by South Birmingham, who also showed prize-winning films made by Northampton Film Society. Other clubs contributing items of varied interest were Birming-

ham, Coventry, Norwich, Warwick and Leamington, and Thornton Heath.

The tape/slide feature, 'Moses,' with which a local school won first prize in the Grundig amateur tape recording contest, was on view. Demonstrations of stereo, stripe sound projection, and puppetry with back projection were available, and live music was provided by the Caribbean Euphony Steel Orchestra. Among trade exhibitors were Acos, Clarke & Smith, E.M.I. and M.S.S.

The Rally was opened by the Mayor of Northampton, Alderman F. Tomkins, who is the club's president. Paying tribute to its enterprise in organising the event, he acknowledged the work it was

doing to inform the blind and entertain the disabled.

After the Rally the club was kept busy recording the annual Dance Festival at the Salon.

### MIDLANDS MEET

A special meeting of the Association of Midland Tape Recording Clubs was held during the Rally. Object of this new, independent body is to promote co-operation between clubs in the Midlands in the interests of the hobby. Further details are available from J. T. Gilbert, 'Woodcote,' Box Trees Road, Dorridge, Solihull, Warks.



## Reawakening!

Following a sleeping period due to falling membership, **Edinburgh** club now has a nucleus of active members who are striving to restore it to its former glory. A full programme including outside recording, tape/slide activity and construction evenings is now going ahead on a fortnightly basis and a newsletter is being circulated. The new secretary, a former member of the Cardiff club, is J. Gordon Cochrane, 7 Gardiner Road, Blackhall, Edinburgh, 4.

## Glasgow's best

Since moving into new premises in North Hanover Street where they have every facility for recording, **Glasgow** club members have made steady progress. A competition for a commercial tape brought forth some amusing entries. President Howard M. Lockhart gave a talk on his recent world tour and was entertained in turn by a selection of the year's best efforts.

Among contributors to the club's sound magazine for the blind, which circulates to a growing audience, were Jimmy Shand and Joyce Grenfell. An edited recording on the last days of Glasgow's trams continues to attract interest among enthusiasts in all parts of the country.

## Q and A

Questions on editing techniques, club activity, grades of tape and standardisation of equipment were among many put to a panel consisting of Walter Gillings, Editor of **ATR**, Alan Lovell of 'The Tape Recorder' and club treasurer Alan Forrester during a 'Question and Answer' evening at **Ilford**. The panel

- Don't miss any points . . . Send your news regularly to the Club News Editor, **ATR**, Room 532, 168 Regent Street, London, W.1.

also listened to some faults which had spoilt live recordings and hazarded their opinions of the causes.

Recordings made at a performance of **Ilford Promenade Orchestra** and of a local jazz group, **The Sonics**, were played back at another meeting. The quiz championship finals brought victory to Alan Forrester.

## CIVIC APPROVAL

● The Mayor of Northampton, Alderman F. Tompkins, accompanied by the Mayoress, has a look round after opening the Tape, Audio and Cine Rally held by the Northampton club. Escorting the civic heads is club chairman Mr. C. W. Percy. The Mayor is also club president.



## Quiz for Librarians

At the invitation of the Gillingham Libraries staff, two members of the **Medway** club provided a 20-minute quiz on tape which aroused much interest at a social. Besides experimenting with electronic music, the club continues to present a monthly programme at two children's homes and to tapespond with a club in Northern Ireland.

## Meet the people

Rugby club officials presented demonstrations to local Young Conservatives and Methodist Guild members. At the request of the organising committee of the 'Freedom from Hunger' campaign, speeches at a public meeting were recorded by secretary Mike Brown. Members saw the BASF film, 'The Magic Tape,' as presented by Mr. John Parrington, and discussed standardisation at another meeting.

## Stereophonia

To put the accent on sound, **South Birmingham** members devised a 4-track system of 'Stereophonia' to present their club film, 'Parade,' at the Northampton Rally. A modified Revox tape recorder was used to make it possible to record and play back on all four tracks in the same direction.

The film follows the activities of the club in collecting material for hospital programmes. A commentary was produced from a central speaker and mixed in with music from left and right. A go-kart race meeting sounded most realistic, and during scenes at an air display a fourth speaker gave the effect of planes coming from all directions.

The film has since been shown at Leamington, and requests for showing at other clubs testify to the interest it has aroused.

## Oldest interviewee

Member Larry Seen set up a record by interviewing 108-year-old Miss Helen Dart, of Paignton, for the **South Devon** club magazine. It was established that she is the oldest person to be interviewed on tape. Producing sound effects for a Victorian melodrama written by David Pletts, other members discovered that a recording of jingling keys played back at slower speed served to simulate the jangling chains of a torture chamber.

A programme entitled 'Excursion in Stereo' presented by chairman Gordon Furneaux included a cabaret produced for a local blind home and a multi-track recording of guitar music.

## Fate's secrets

**Stamford School** tape recording enthusiasts visited the local Mid-Lent Fair, but failed in their ambition to interview a fortune teller. Obviously, there are things which must go unrecorded . . .

SEE NEXT PAGE

## TOP TEN CLUBS FOR JUNE

- |                   |                     |
|-------------------|---------------------|
| 1. NORTHAMPTON    | 6. SOUTH BIRMINGHAM |
| 2. BETHNAL GREEN  | 7. BARNSELY         |
| 3. THORNTON HEATH | 8. GLASGOW          |
| 4. YORK           | 9. WHITSTABLE       |
| 5. RUGBY          | 10. MEDWAY          |

## TAPE CLUB NEWS—from page 21

### Keen contestants

**Thornton Heath's** monthly competitions continue to attract excellent entries from members who are also preparing for the **ATR** Tape Recording Contest and the national contest. Miss Marie Lohr recorded a 'get well' message for the club's hospital programme. A Streatham church is arranging a special service to be recorded for playback to four old folk's homes in the area and afterwards at Croydon.

Demonstrations were given by Spalding Electrics, Addiscombe, and Francis of Streatham. A team of handbell ringers also visited the club. Future recording sessions include an organ recital, orchestral and dance band rehearsals, and a visit to a professional studio. One member's recording of a service in St. Wulfram's, Grantham, to celebrate the 50th anniversary of the town's charter was played back in edited form, with linking commentary, at a club meeting six days later.

### End of the Empire

A recording of the closing of the Empire Theatre, Glasgow, by the **West**

of **Scotland** club will be included in member J. Malcolm's sound magazine for the blind. A talk on microphones and a tape-slide show were among other activities in a busy month concluding with a visit to Edinburgh Zoo.

### Sexton Blake exercise

Old and new members of the **Whitstable** club are teaming up to produce instalments of a thriller serial, 'Sexton Blake and Murder at Seven,' which is pursuing its improbable course. Recordings in a 'Talent on Tape' contest have been completed. A tape/slide show from Rhodesia, a demonstration of stereo headphone listening and the usual quizzes have also occupied members.

Responding to a request by the **Faversham Society**, the club will interview local residents and gather sound pictures of the town's industries for a programme to be called 'Faversham in Sound.' The material will eventually be edited into half-hour feature tapes for the society's archives.

### York's goal

The reorganised **York** society is well

embarked on what should prove its most successful year, with the **ATR** trophy as its goal. New tape secretary D. Cunningham, assisted by his son, is gaining the interest of newcomers.

Members were allowed backstage to interview Susan Maughan, Eden Kane and Jess Conrad, among the artists appearing in 'Your Lucky Stars' at the Rialto Theatre. Interruptions by Shane Fenton, Al Paige and Rolph Harris were also recorded. The interviewer was club chairman Godfrey Machen, and the completed tape will be used in the local hospitals broadcast.

The doctor who performed a life-saving operation when Mr. Machen was injured last January, and the nurse who gave him after-care, were married soon after the chairman's own wedding. As a token of appreciation, the club recorded the event. Members are also assisting a Canadian enthusiast who has asked for recordings of bells of English cathedrals and churches.

### FOR THE RECORD

New secretary of **Great Yarmouth & District Tape Recording Society** is Mr. G. M. Wykes, 7 The Pastures, Burgh Road, Gorleston, Great Yarmouth.



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# HOWARD TAPE RECORDERS



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Have YOU anything to say? Letters of praise, criticism or general comment of interest to other readers find a billet here. Address them to: The Editor, ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1.

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### Fair play for dealers

● The Home Music Centre, Deansgate, Manchester, writes:

WE were very pleased to read your editorial in the March issue of your excellent magazine. This is the first time we have seen such sensible and outspoken words on a subject which has been causing considerable anxiety among people like ourselves who aim to give a high standard of personal service with first-rate maintenance facilities to the people who buy tape recorders from us.

Hardly a day passes without several people coming into

## THE THINGS YOU SAY

the shop requesting service on machines which they have purchased elsewhere within the last few months. The excuses they give for not going back to their own dealer usually fall into these categories:—

1. 'He only deals in TV sets and knows nothing about tape recorders.'
2. 'My dealer says that people who buy tape recorders should do their own servicing.'
3. 'I was given a discount on the understanding that I went to some other shop for service and spares.'

We hope your editorial may have the effect of persuading tape recorder manufacturers to confine their products to shops which can give full technical assistance and skilled servicing to their customers. We would also suggest that you advise your readers to make careful inquiries about the background and knowledge of tape recorders possessed by any shop before buying one from them, and not afterwards. After all, you would not go to a coal merchant's to buy a pair of spectacles.

(This letter expressing the dealer's viewpoint supports our argument that, if he expects to receive the service to which he is entitled, the customer should establish a proper relationship with him, based on mutual trust, right from the start.—Editor).

### The Mighty Organ

● W. Dickenson, Stroud, Glos., writes:

I would like to thank Stan White for his friendly record and tape reviews, especially those dealing with theatre organs and the old steam organs, which still interest many older readers.

Though I have not heard the Gerald Wilson and Richard Holmes 'You Better Believe It' record which upset Russ Allen, his suggestion that the organ should be kept for Bach strikes me as rather silly for a man in his position. All organists aren't the same, Russ!

The late Fats Waller made a 78 rpm disc on which he plays the theatre organ and sings 'Ain't Misbehaving' and 'Don't Try Your Jive on Me'—an HMV recording. Coming up to date, there's the Vogue recording, 'George Wright Plays the Mighty Wurlitzer,' with 'Boogie' and 'Brazil.' There are still quite a few top organists selling discs that please.

(Though Russ Allen has described the electric organ as 'one of my pet hates,' he occasionally finds a recording which 'almost makes me like the wretched thing.' See Hi-Fi Discs, Aug. '62.—Editor).

### Tricks at high speed

● P. R. Lloyd, Gt. Crosby, Liverpool, writes:

I was interested to read E. A. G. Gardiner's letter in the March issue about the 'obtrusive whistle.' The Philips EL3541 tape recorder can be used for high-speed recording without fitting an auxiliary motor. The case of the machine is removed and the following procedure carried out: the record and fast wind buttons are pressed down simultaneously, the amplifier switch is operated manually, and the pressure pad is held lightly against the record head.

The high-pitched whistle could be removed by incorporating a low pass filter in the amplifier or by re-recording, using a low pass filter in the input stage of the second tape recorder. This would be quite effective, as the required signal would usually be of quite low frequency. One of the best tricks is to slow down an alarm clock bell until it sounds like Big Ben!

### Man's last refuge

● David A. Waterfield, Ogmore Vale, Glam., writes:

Can anyone explain why there are so few girls interested in tape recording? Very few are listed in tape directories. What's the matter, girls? It isn't so complicated as it seems, really!

I would like to congratulate all concerned in producing such a good tape magazine as ATR. Unlike most magazines, it is not so technical that amateurs cannot follow the contents. However, I think a list explaining

technical terms would be a great help to readers.

I would like to hear what other readers think about the two-way deck. I think the reversible deck which makes the other track instantly available is a wonderful asset, and cannot understand why the manufacturers have abandoned it. It seems a retrogressive step.

(The two-way deck, involving duplication of heads and reversible motors, is a rather expensive proposition. It would seem that manufacturers are inclined to regard such facilities as 4-track recording as meeting a greater demand.—Editor).

### Two or 4-track?

● M. S. Pulley, Roehampton, London, S.W. 15, writes:

I am thinking of buying a tape recorder. I don't know a lot about them but can tell good reproduction when I hear it. I have been told that although 4-track gives more playing time it is not as good as 2-track in this respect. Can you tell me if there is any difference?

(The difference in quality of reproduction between 4-track and 2-track is negligible; the only real advantage of 4-track is economy of tape. On the other hand, if you envisage much editing by tape cutting you will find 2-track operation more convenient.—Technical Editor).

### Essential aid

● F. McFarlane, Pinner, Middlesex, writes:

I have been reading several tape recording magazines since I took up this hobby three years ago, but I think ATR has proved the most helpful. I find it quite easy to understand as it is not too technical but very informative. I was particularly interested in the A. Lester Rands page on hi-fi amplifiers. If your magazine continues to give such good information, I shall continue to buy it.

● C. D. Lyons, Eastcote, Ruislip, Middlesex, writes:

I recently bought a Grundig TK14 and on telling a friend about this he showed me some copies of your magazine. I must say I never realised the scope of tape recording and that I consider ATR an essential to the enthusiast.

(These comments are typical of the hundreds we receive from new and old readers of ATR. They are a constant spur to our efforts and those of our contributors.—The Editors).

## THE ATR RADIO TUNER—from page 17

these components are brought up through small holes in the chassis as in Fig. 3.

Details for winding the ferrite aerial are also shown in Fig. 3. The components supplied by Clyne Radio Ltd. under the ATR Special Offer, however, include the ferrite aerial coils already wound and colour-coded as shown in the diagram. Note carefully the transistor connections and avoid overheating the leads when soldering; the same applies to the crystal diode.

Assemble and wire all the components exactly as shown on the 14-way tagboard and make sure the electrolytic capacitors C5 and C6 are connected the right way round. **Check all wiring before connecting the battery.** Wrong connections could permanently damage the AF117 transistor.

The socket on the left-hand side of the front panel in the photographs is for connecting an external aerial. **Direct connection of an aerial to the tuned circuit would, of course, affect the selectivity.** Those who live in the fringe areas of BBC local station reception can improve sensitivity by winding a one-turn loop at one end of the ferrite rod. One end of the loop should be connected to the common earth or + line, and the other end to the socket. An external aerial wire about 6ft. long should be sufficient to improve reception.

### Testing

Connect up to the radio or gram input of the tape recorder via a **screened lead**. Set the volume control of the tuner to about half travel; the volume control of the tape recorder to maximum. The Home and Light Programmes should be found at approximately the positions shown in Fig. 5. The 'reaction' control VR1 should be set to zero (fully anti-clockwise) and will not have to be used except to boost weak signals in poor reception areas.

The output voltage at about half volume setting should be sufficient for full recording level via the radio/gram input of the tape recorder. Too high a setting may result in slight instability and distortion: but don't forget that ferrite aerials are directional, so it may be necessary to orientate the tuner for maximum signal strength. Those who have no radio/gram (high level signal) input socket may use the microphone input, but it will probably be necessary to employ the alternative output circuit (see Fig. 6) to reduce the high signal.

This tuner, if properly constructed with the components specified, has a high degree of sensitivity. Under favourable conditions and with discreet use of the reaction control, it may even receive the more powerful Continental stations.

There is sufficient space around the edge of the front panel to allow the tuner to be housed in a wood case. **Do not use a metal box**, which would completely screen the ferrite aerial and stop reception altogether. Alternatively, providing the layout is not altered too much, the tuner could be constructed entirely in a small plastic box.

### HE WON THE STUZZI 401

Winner of the Stuzzi 401 Competition held at the Audio Festival was Mr. John Theobald, 54 Fairway Avenue, Tilehurst, Reading, Berks., who was the only competitor to place the features of the new model in exactly the order of importance previously agreed by the judges. This was: 1, Track-to-track transfer facilities; 2, Two-speed deck with Papst motor; 3, Self-mixing—two channels; 4, Monitoring on built-in speaker—separate oscillator; 5, Four-track stereo replay with add-on unit; 6, Long playing time—7in. spools. In his opinion another important feature was 'Printed circuit reliability.'

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(Luggage type carrying case. £7 1s 8d. extra).

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## FRESH STYLING FOR STELLA 4-TRACK

**A** NEW 4-track, 2-speed tape recorder from Stella, model ST458, has an entirely fresh styling and sells at 39 gns.

A sloping fascia panel at the front houses the speaker and all but two of the controls—the switches for speed and track selection. On the control panel are push-buttons for record and playback, pause, fast forward wind and fast rewind, and other controls for microphone/tone, pick-up/radio and playback volume. There is also a 4-figure programme indicator with push-button zero reset.

Speeds are  $1\frac{1}{2}$  and  $3\frac{1}{2}$  ips. Frequency response at the higher speed is quoted as 60 to 13,000 cps  $\pm 3$  dB. The deck will take 7in. spools, allowing a maximum playing time of 17 hrs. with D.P. tape. Output power is  $2\frac{1}{2}$  watts, and there is a special output socket for the EL3787 preamplifier which, with an additional amplifier and speaker, will permit reproduction of prerecorded stereo tapes at  $3\frac{1}{2}$  ips. A parallel playback facility also allows for simultaneous replay of tracks 1 and 3 or 2 and 4.

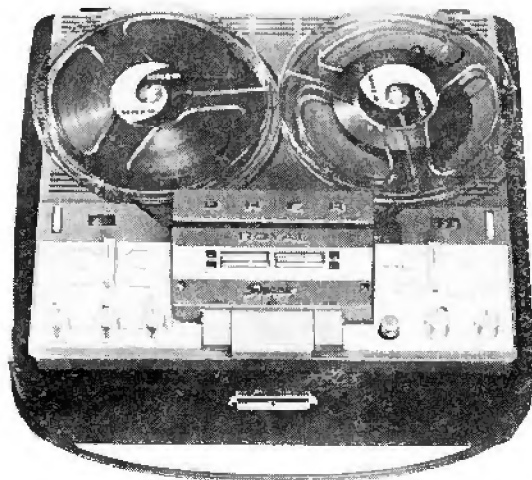
The machine (pictured above) is housed in a cabinet measuring  $14\frac{1}{2}$ in.  $\times$   $14\frac{1}{2}$ in.  $\times$  7 $\frac{1}{2}$ in. covered with two-tone grey polystyrene, and weighs 18lbs.

## NEW FROM UHER. THE ROYAL STEREO

Latest addition to the Uher range of tape recorders is the fully transistorised,  $\frac{1}{4}$ -track, 4-speed Royal Stereo 784, priced at 135 gns. (without microphone). Equipped with the 817 Accoustomat remote control system, it accommodates 7in. spools and has facilities for monitoring, mixing and echo, each  $4\frac{1}{2}$ in. speaker giving an output of 2 watts.

The four speeds are 15/16 to

### ● The Uher Royal Stereo 784



# THE SOUND SCENE

## ● News of new products

$7\frac{1}{2}$  ips; the quoted frequency response at the highest speed is 50 to 20,000 cps and at the lowest, 50 to 4,500 cps. Dimensions are 15in.  $\times$  13 $\frac{1}{2}$ in.  $\times$  6in.

Another new model in this range is the Uher 712 U-matic, a single-speed, fully transistorised machine selling at 69 gns. Quoted frequency response at the  $3\frac{1}{2}$  ips speed is 40 to 16,000 cps. The deck will take 7in. spools, and dimensions are similar to the Royal Stereo model. The price in this case includes a microphone.

## TWO VERSIONS OF THE BRENNEL STB 1

The new Brenell STB 1 mono/stereo tape recorder, with its additional playback heads and preamplifiers, is designed for use with external hi-fi stereo installations. Though supplied in a strong wooden case for portability, it may be easily removed from its cabinet for fitting into permanent installations, the unit being mounted on a special frame to facilitate this.

Mixing, superimposing and cross-track recording facilities are incorporated. Monaural recordings may be made on both tracks, either or both of which may be monitored; and stereo recordings may be made from microphones, records or radio, with the same facility for monitoring.

An additional  $\frac{1}{4}$ -track playback head increases the machine's versatility, enabling pre-recorded mono and stereo tapes of both  $\frac{1}{4}$ -track and  $\frac{1}{2}$ -track type to be played.

Two models, each with speeds of  $1\frac{1}{2}$  to 15 ips, are available. The STB 1/S, which accommodates spools up to 8 $\frac{1}{2}$ in., is priced at £120; the STB 1/510, suitable for spools of 10 $\frac{1}{2}$ in., is £140.

The Brenell Mk. 5 Series 2 model has also been introduced, to succeed the popular Mk. 5 machine. This incorporates the well-known 4-speed, 3-motor tape deck fitted with a narrow-gapped record/playback head around which a new amplifier has been designed.

SEE NEXT PAGE

## ● THE SOUND SCENE

—from page 25



● The Sony 801 battery/mains operated portable

Housed in a strong wooden cabinet, the machine's appearance is enhanced by grey masks covering deck and amplifier. It is available in two models, one priced at 74 gns. with a recording level meter; the other with magic eye, at 69 gns.

### SONY 801 IS BATTERY/MAINS DRIVEN

Suitable for office or field use, the new Sony 801 portable tape recorder is mains or battery operated. Incorporating nine transistor circuits, it is claimed to give a tonal quality better than most miniaturised models. An earphone for monitoring is among other advantages, which include a tape counter, a battery level indicator, and hold and back space controls.

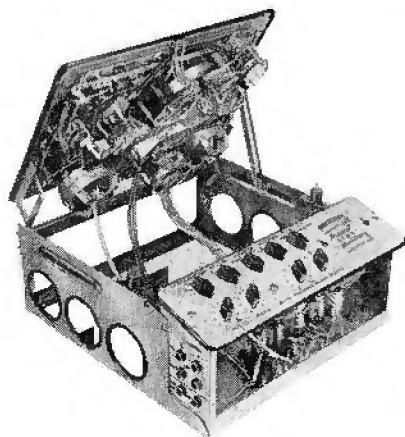
Speeds are  $1\frac{1}{2}$  and  $3\frac{1}{4}$  ips, and 5in. spools are fitted. Measuring 13in. × 4in. × 2in. approximately, the machine weighs 13lbs. and is carried in a leather shoulder-case. Price, including accessories, is 89 gns.

### RESTYLING FOR THE ROBUK RK4

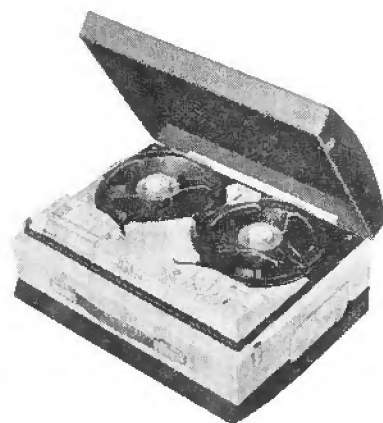
Introduced at the Ideal Home Exhibition, the Robuk RK4 3-speed tape recorder is similar to the previous model RK3 (reviewed in *The Sound Scene*, Nov. '62), but is now reduced in price to 36 gns., including microphone, tape, a spare spool and recording input lead.

The cabinet has been redesigned, a particular feature being the simplicity of access to the interior. Removing four screws at the base makes it possible to lift off the cover, leaving the chassis completely exposed for examination or replacement of spare parts.

With a 3-motor deck accommodating 7in. spools and an unusually fast rewind, the machine has facilities for mixing, superimposition, and monitoring through the speaker, which



● Inside view of the Brenell STB 1, which is easily removed from its cabinet for fitting into permanent installations.



● Right: The restyled Robuk RK4

gives an output of  $2\frac{1}{2}$  watts. Frequency response at  $7\frac{1}{2}$  ips is quoted at 60 to 14,000 ips  $\pm 3$  db.

Simplified 'piano keys' and rim controls for finger-tip operation add to the popular appeal of this model, which measures 16in. × 11½in. × 7¼in. and weighs 23lbs.

### THE DYNA-SONIC LOUDSPEAKER

Audio Services Ltd., Barnet, manufacturers of the Dyna-Static loudspeaker, have introduced the Dyna-Sonic, a smaller model incorporating some new features.

A cluster of four dynamic tweeters with staggered resonances provide for the upper register, giving a smooth response; and close attention to

enclosure design has removed the impedance rise at the bass resonance frequency, resulting in a deep, crisp bass without colouration from the 13in. × 8in. elliptical moving-coil unit with half-metal cone.

Power handling capacity is 15 watts, with a 15 ohms impedance and an even response of 35 cps to 17 Kc/s. The Dyna-Sonic is priced at £36.

## UP-TO-DATE HANDBOOK

The 'Magnetic Recording Handbook' by R. E. B. Hickman, which covers the whole theory, history, practice and servicing of tape and wire recorders, is now in its third edition. Since it first appeared in 1956 much development has taken place, and the new edition does full justice to the progress made in domestic and lightweight machines, 4-track and stereo, L.P. tape, video and all.

The home recordist now has a choice of equipment which, as the author puts it, is 'almost embarrassing'. His lucid explanations will help to reduce this confusion.

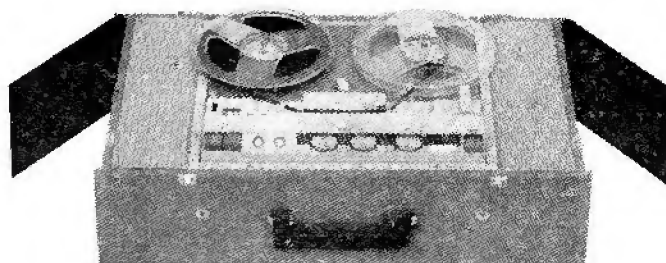
Though the approach is technical, the book is notable for the vast amount of easily assimilable information it contains, supplemented by scores of pictures and diagrams, and a comprehensive bibliography. Nobody who is seriously interested in the subject can avoid reference to it sooner or later. Published by Newnes at 27s. 6d., it is a wise investment.—T.S.



## ● UNDER TEST

# THE SONY 464-CS STEREOPHONIC TAPE RECORDER

Reviewed by F. C. Judd, A.Inst.E



The Sony 464-CS

**F**OUR-TRACK stereo and cross-track recording are the main features of the new Sony 464-CS dual channel tape recorder. It is a completely integrated stereophonic machine, with built-in amplifiers and loudspeakers for full stereo record and playback.

The styling is essentially modern and of excellent finish. The 464-CS has a central front panel for ease of operation, and two speeds— $7\frac{1}{2}$  and  $3\frac{3}{4}$  ips. Track designation is quarter-track of standard  $\frac{1}{2}$  in. tape, with an erase and record/playback head for each channel.

Other features are a three-numeral tape position indicator, tone control, dual recording level magic-eye indicators, separate microphone and auxiliary inputs, line outputs for feeding external amplifiers, monitoring and external speaker outputs, etc. Accessories include two microphones, a 7 in. spool of tape and spare spool, and connecting leads.

Mechanical features are fast forward and reverse rewind, instant stop lever, and sound diffusion wings for optimum stereo playback performance.

### Sound-on-Sound

Aside from full stereo recording via the twin microphones or from a stereo pick-up, the Sony 464-CS has the added advantage of sound-on-sound recording. A recording made on Track 1 can be transferred to Track 2 with extra material. The process can then be repeated by re-recording back to Track 1 with still more added items. While this system is in operation monitoring can be carried out with an earphone which the makers supply as an extra.

Following the excellent instruction book, one can soon master the different operation sequences for recording, playback and the track-to-track transfer system. The instructions also give

guidance for maintaining and servicing the machine, and circuit diagrams.

Mechanical performance was found to be quite up to specification—low wow and flutter at either speed, fast rewind without tape spilling, and instantaneous braking. My only criticism is that the tape does not drop into the head slot evenly; one has to guide it in before threading up on the take-up spool.

Electrical performance, too, was excellent. My frequency response tests, made with a pen recording output meter, are shown in the diagram. Recordings made with the 464-CS were up to high-fidelity standard and free of noise, but to realise the full spatial effect of stereo replay one would need to use widely spaced external loudspeakers. Because of their closeness, the internal speakers limit the stereo effect despite the diffusion wings at the sides. However, this is something one can only be critical about after using the machine for stereo replay.

### Crosstalk

With any good stereophonic tape recorder, the crosstalk between channels is far lower than can be obtained from stereo gramophone discs. The Sony 464-CS has a track-to-track leak-

## TECHNICAL SPECIFICATIONS

**Tape speeds:** Instantaneous selection,  $7\frac{1}{2}$  or  $3\frac{3}{4}$  ips.

**Frequency response:** 40 to 15,000 cps at  $7\frac{1}{2}$  ips; 40 to 10,000 cps at  $3\frac{3}{4}$  ips.

**Signal to noise ratio:** 45 dB or more (per channel) across line output.

**Flutter and wow:** Less than 0.15 per cent at  $7\frac{1}{2}$  ips; less than 0.25 per cent at  $3\frac{3}{4}$  ips.

**Harmonic distortion:** Less than 2 per cent at 3dB below rated output.

**Bias frequency:** 58 Kc/s.

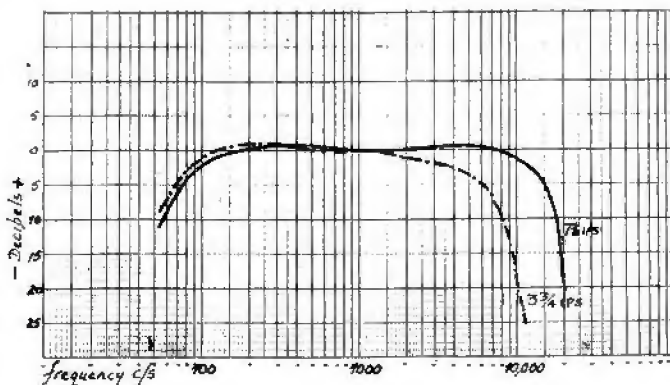
**Inputs:** High impedance microphone and auxiliary inputs.

**Outputs:** High impedance monitor and line output; 8 ohms speaker outputs.

**Output power:** 3 watts combined monitor/speaker outputs.

**Weight:**  $37\frac{1}{2}$  lbs. approx.

**Dimensions:**  $22\frac{1}{2}$  in. x  $14\frac{1}{2}$  in. x 8 in. approx.



Frequency response of the Sony 464-CS at  $7\frac{1}{2}$  and  $3\frac{3}{4}$  ips.

age approaching -50 dB, thus providing the best possible location of sounds recorded and replayed stereophonically—keeping in mind, of course, my comments on loudspeaker spacing.

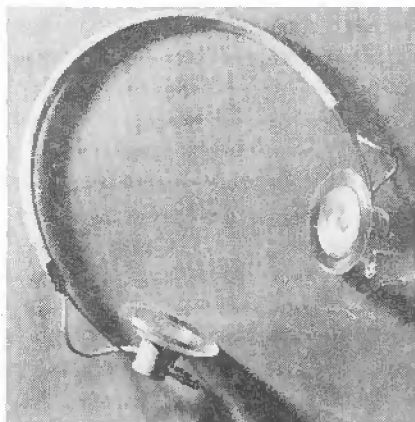
In all other respects I found this an excellent tape recorder which I can recommend to those seeking a multi-purpose machine, and eminently suitable for creative recording techniques. Of Japanese manufacture, it is distributed in the U.K. by Tellux Ltd., Romford, Essex. The price is 98½ gns.

SEE NEXT PAGE

## UNDER TEST

—from  
page 27

The AKG K50  
dynamic  
headphones



### THE AKG K50 DYNAMIC HEADPHONES

**M**ONITORING with high quality headphones has great advantages over loudspeaker monitoring from the point of view of quietness and intimate closeness to the sound. There is also the advantage of being able to listen not only to finished recordings but to radio programmes without disturbing others, and with reproduction in the hi-fi category.

The AKG type K50 dynamic headphones can be used monophonically or stereophonically and have a frequency range of 20 to 25,000 cps. They are extremely comfortable and pleasant

to wear; you can keep them on for long periods without irritation. I have been using a pair for some time, and until you have listened through headphones of this calibre you have not listened to really good reproduction at all.

These headphones can be operated directly from the extension speaker sockets of any tape recorder or amplifier, or via a special matching transformer from 600 ohm line outputs or other high signal level source. Normal power requirements are 250 mV per unit for a sound pressure level of 95 dB. Maximum distortion for 90 milliwatts at 6V is less than 3 per cent. The impedance per unit is 400 ohms  $\pm 15$  per cent over the frequency range 20 to 25,000 cps. For high impedance outputs a 4-1 matching transformer can be supplied extra.

The AKG type K50 headphones retail at £7 10s. and are distributed by Politechna (London) Ltd.—F.C.J.

### HAVE YOU GOT YOUR SOUND FX DISC ?

In view of the popularity of the Special Offer in the May issue, the Hi-Fi Sound Effects Disc containing 14 authentic sound effects which may be used by ATR readers free of copyright is still obtainable at the bargain price of 5/- plus 6d. postage — but only for another month.

Take advantage of this unique offer by sending a postal order for 5/- made out to 'Amateur Tape Recording,' with 6d. in unattached stamps and the coupon below, to Dept. D, ATR, 152 Maybank Road, South Woodford, London, E.18. This offer closes on June 30th.

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June, 1963

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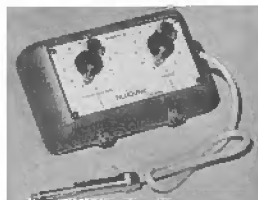
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## SOUTH AFRICA

EVELYN DAVEY & ROSE WHEELER, 57 and 32, hospital clerk and nursing sister, 3 The Mumbies, Gillespie Street, Durban, Natal. Travel, chit-chat; popular music, no jazz. Philips EL3514 4-trk., 5in. 3 $\frac{1}{2}$ . U.K., N. & S. America, Australia, N.Z., English speaking only

## BUCKINGHAMSHIRE

SUSAN JAMES, 8, schoolgirl, 207 Churchill Avenue, Aylesbury. Reading; pops. Fidelity Argyl Minor, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere.

M. G. DUNCAN, 21, accountant, 2 King Edward Avenue, Aylesbury. Stamps, sport, travel; light classical, some pop, jazz. Sony 521 stereo 2 & 4 trk., 7in. 3 $\frac{1}{2}$ . 7 $\frac{1}{2}$ . West Indies, U.S.A. English or possibly French speaking.

## CHESHIRE

PETER BUFTON, 15, schoolboy, 35 Bridgworth Road, Irby, Wirral. Photography, record collecting; pop, C & W, trad jazz. Ekco RT366, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . U.S.A., Canada.

BERNARD H. JONES & J. STANLEY ASHTON, 35 and 49, draughtsman and gearcutter, 'Ashwood,' Mottram Road, Matley, Stalybridge. Hi-Fi, gadgetry, cine, painting; classical, Ferguson TR441, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ ; Ferrograph 422 stereo or mono, 7in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ ; Simon SP4 Automatic, 7in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere.

## DEVON

ROY G. CAINE, 25, tannery labourer, 54 Widgery Road, Whipton, Exeter, 35mm photography, motorcycle touring; pop. Sound Riviera, 7in. 3 $\frac{1}{2}$ . Europe; anywhere English speaking.

PHYLLIS ANN PEEKE, 18, machinist, 5 Whipton Road, Exeter. Films, dancing, musical; ballads, pop, no classics. Sound Riviera, 7in. 3 $\frac{1}{2}$ . U.S.A.; anywhere English speaking.

## KENT

FREDERICK ARTHUR, 24, jeweller's assistant, 92 Gardiner Street, Gillingham. Photography, sound effects; instrumental, pop, classical. Philips EL3542 4-trk., 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ . U.K.

DAVID COBB, 21, photographer, 14 Dale Road, Swanley. Entomology; classical. Fi-Cord 202, 4in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . New Guinea, Australia.

## LANCASHIRE

ERIC BARR, 31, office worker, 5 Amanda Road, Rainhill, Nr. Liverpool. Humour (goonery), soccer, people; good pop. Elizabethan Popular De Luxe, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere English speaking.

JACK PHYTHIAN, 35, shop assistant, 54 Morley Street, Rochdale. Theatre, photography, travel; all types, especially Johnny Mathis, Grundig TK23. Argyl Fidelity, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere; male only.

Particulars of Tapespondents are given in the following order: Name, age, occupation, address; special interests, taste in music; type of machine, spool sizes, speeds; area of tapesponding required.

# THE TAPE DIRECTORY

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world-wide friendship

E. ALLAN METCALFE, 32, decorator, 54 Morley Street, Rochdale. Travel cinema, photography physical culture; all, especially Johnny Mathis, Truvox 4-trk., and Fidelity Argyl 2-trk., 7in. 3 $\frac{1}{2}$ . 7 $\frac{1}{2}$ . Anywhere; male only.

ALAN SHENTON, 20, butcher, 161 Ashton Old Road, Ardwick, Manchester, 11, Reading, dancing, electronics, hi-fi; all except jazz. Verdik SL, 7in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . American, Swiss, French or German girl about same age; English speaking only.

## LINCOLNSHIRE

TERENCE A. ARMSTRONG, 22, mushroom grower, The Hollies, High Street, South Elkington, Louth. Playing piano, piano accordion and drums; trad jazz, pops, ballads, C & W. Dynatron TRPI, Elizabethan Popular 200 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere; especially France.

W. H. RUSSELL, 51, ambulance driver, 'Marcomb,' Marina Road, Maplethorpe. Football, outdoor recording; theatre, fair and electronic organ. Grundig TK30, Fi-Cord 202, 7in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere English speaking.

## NORTHAMPTONSHIRE

TERANCE QUARRY, 18, tyre storeman/driver, 15 Oaklands, Upper Weedon, Weedon. Sound reproduction; stereo instrumentals. Telefunken Magnetophon 96, 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Austria.

## STAFFORDSHIRE

VICTOR RILEY, 41, work study engineer, 62 Brook Glen Road, Staff. Swimming, dancing, caravanning, piano, rally driving, travel, family chatter, good humour; pop to light classics. Walter DI303 5in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . France, Spain, Canada, U.S.A. S. Africa, especially East London; English and French speaking.

## SURREY

ANDREW A. GRAY, 39, photographer and salesman, 119A Manor Drive North, New Malden. Photography, reading, films; all except heavy classical. Philips EL3542, 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . U.K., U.S.A., Canada, Italy, Germany.

PAUL SPEIGHT, 14, schoolboy, 42 Hunston Road, Morden. Photography, stamp collecting; pops, light, jazz. Wyndor Victor, 5in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere in U.K.

CHRISTOPHER J. RAGG, 25, job analyst, 412 Woodham Lane, West Byfleet, Weybridge. Travel, psychology, community development, education, sociology, personnel and general management; popular, national, dance, classical, Uher 4000 Report, 5in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . U.S.A., Asia, Africa; anywhere.

## WARWICKSHIRE

COLIN R. G. WALTON, 17, schoolboy, 84 East View Road, Wyld Green, Sutton Coldfield. Electronics, hi-fi, piano; pop, trad jazz, classical. Revox E36, 2-trk. stereo, 10in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . U.S.A., Australia.

RICHARD HARMER, 27, shop assistant, and DEREK HUNT, 32, attar, 64, Middleton Hall Road, Cotteridge, Birmingham, 30. Photography records; anything. Elizabethan Princess, 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere; male only.

## YORKSHIRE

A. S. FOUNTAIN, 56, retired, 77 Clarendon Road, Fulwood, Sheffield, 10, Hi-fi stereo and mono, electronic organs; catholic, Ferrograph 422 stereo, Telefunken 75, Philips portable, 8 $\frac{1}{2}$ in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . U.K., Far East; anywhere abroad.

ALAN RIDDIOUGH, 20, lab. chemist, 19 Carmona Gardens, Shipley. Photography, films; trad, pop, light classical. Fidelity Major 4-trk., 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere.

ROY INGRAM, 29, bus conductor, 20 Rosalyn Crescent, Bentley, L'ncaster. Acting, stereo, comedy, psychology; jazz, pop, opera, organ, C & W, classical. Philips EL3534 4-trk., 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . U.S.A. Sweden, Switzerland; anywhere English speaking.

BARRIE G. COOPER, 25, architectural assistant, 174 Abbot Lane, Sheffield, 8. Amateur radio, electronics, general; pop, Spanish guitar, C & W. Wyndor International, Collaro Studio and HFTR3, 2 and 4-trk., 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere English speaking.

## SCOTLAND

JOHN GROME, 42, State registered nurse, 94 Links Street, Kirkcaldy, Fife. 35mm photography; light, light opera. Cossor CR1601 4-trk., 7in. 1 $\frac{1}{2}$ , 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere English or Esperanto speaking.

FIONA LOCKIE, 30, nurse, 4 Maryfield Place, Bonnyrigg, Midlothian. Music, reading, gemology rambling, swimming, dancing, photography. Philips 4-trk., 5in. 3 $\frac{1}{2}$ . Channel Isles, Brittany, Holland, Eire.

R. J. Y. McLEOD, 19, student, The Gawans, Gawan Street, Arbroath, Angus. Tape recording; all except heavy opera. Grundig TK20, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere; any age.

## SOUTH WALES

PHILIP WHITTINGTON, 35, signalman (B.R.), 44 Castle Street, Barry, Glam. Photography; all types. Grundig TK23, 5 $\frac{1}{2}$ in. 3 $\frac{1}{2}$ . Anywhere.

DAVID ARTHUR WATERFIELD, 19, labourer, 33 Wyndham Street, Ogmere Vale, Glam. Discussion, sound effects, driving, two-way decks, philately; pop, some classical, Hawaiian, accordion, yodeling, drums. Simon SP4, Grundig TK14, 7in. 3 $\frac{1}{2}$ , 7 $\frac{1}{2}$ . Anywhere; females preferred.



Spool Talk . . . by Jon Edmunds

## BIG GET-TOGETHER TO HELP HOBBY

**D**ON'T count on it, but I fancy that something may come out of the Audio Festival get-together of the four main tapespondence clubs in a mutual effort on behalf of the hobby.

For the first time on record, representatives of World Tape Pals, the Voicepondence Club, World Wide Tape Talk and the International Tape Fellowship found an excuse to meet and collaborate with a tape manufacturer in acquainting visitors with the whys and wherefores of tapesponding. And, of course, with the advantages of the latest mailable tape packages.

The four clubs, which make rather different appeals, have been chary of each other in the past. Now, they are grateful to Mr. 'Tug' Wilson and the BASF organisation for the opportunity it gave them to put in some good propaganda for their cause in a really big way. And if it leads to further combined efforts, it will have been a step in the right direction, which I feel myself has been long overdue.

### One more

If we must have all these clubs — and sometimes I wonder if they are all necessary — at least let them compare notes once in a while, to ensure that their energies are not being dissipated in duplicated effort. And to make life a bit simpler for those who might be more inclined to join one of them if they could only make up their minds which one . . .

Just for the record, I have to advise you of the birth of yet another. International Tape Pals Incorporated announces its aim as 'to spread friendship around the world' and has adopted the motto, 'We Span the Globe.' It is open to all races and colours and has its headquarters at 101 Rotherview Road, Canklow, Rotherham, Yorkshire. The secretary is Roy Teather.

### Lost tape

To offset the wails about tapespondents who neglect to return tapes, John James, World Tape Pals representative on this side, tells me the tale of a tape that got lost in the post.

Knowing that it had been posted to him by his father in Yorkshire, Jack Porter, who lives in Camberley, Surrey, wrote to the G.P.O. about it. Back came a tape, but it wasn't for him. It had been sent by somebody named Frank in Santa Barbara, U.S.A., to somebody called 'Doug' in England. So Mr. Porter wrote to the Mayor of Santa Barbara and asked for his help in tracing Frank, who was obviously in the habit of attending astronomy classes on Monday evenings.

In due course, Frank Gerard, of Santa Barbara, wrote to Mr. Porter asking him to send the tape to Douglas Miles, a blind enthusiast who finally received it, three months late, with a personal tape from Jack Porter.

There's a moral to this tale, of course, as pointed by Mr. James. First, address all tapes you send in sound as well as by label. Second, join an organised tapesponding club, just in case your

tapes get lost, for one of the many things they do for members is to help in tracing them.

### 4-track tip

A Leicester reader, E. C. Symons, comes up with the simple answer to the problem raised by Ron Carey of Southampton concerning tapesponding between 2-track and 4-track machines. He writes:

'His American friend should record on tracks 1-4 and erase on tracks 2-3. This will erase the overlap recording of the message previously recorded by him on his 2-track machine, and no superimposing will be on the tape when returned. I have myself used this method when tapesponding with my own 4-track machine, my friend having a 2-track.'

Reader Symons' tip may be useful to others who have encountered this difficulty.

CUT HERE

## ATR TAPE DIRECTORY SERVICE

If you wish to be included in The Tape Directory fill in this form and send it in. Your particulars will be published as soon as possible.

To: The Tape Directory, ATR, Room 532, Ulster Chambers, 168 Regent Street, London, W.1.

I would like you to include the following particulars in The Tape Directory, and agree to acknowledge all replies I receive in response to my entry.

(USE BLOCK LETTERS)

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Address .....

Age ..... Occupation .....

Special interests .....

Tastes in music .....

Tape recorder used .....

Maximum spool size ..... Speeds .....

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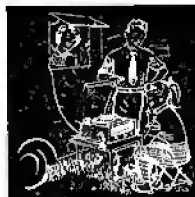
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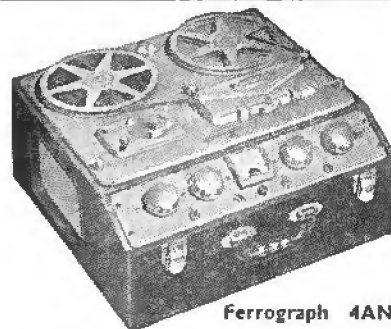
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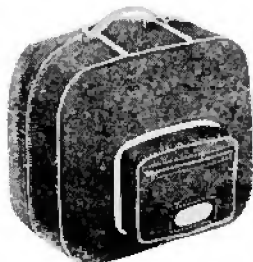
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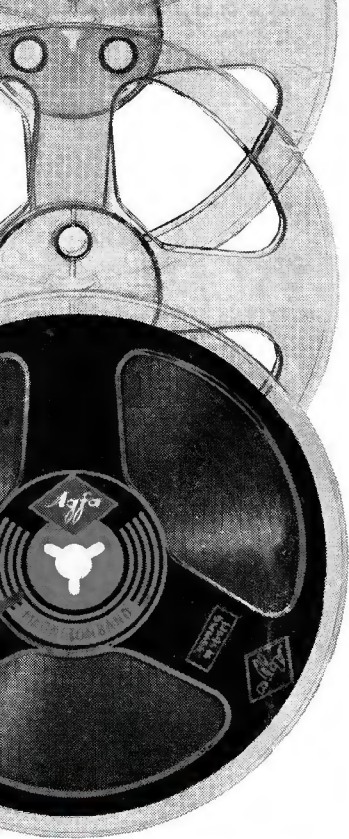
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